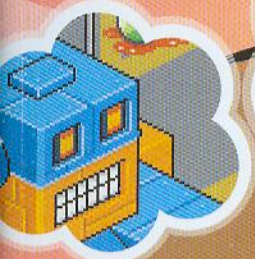


COMPUTER

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36 PAGES OF PRACTICAL PROJECTS

illustration

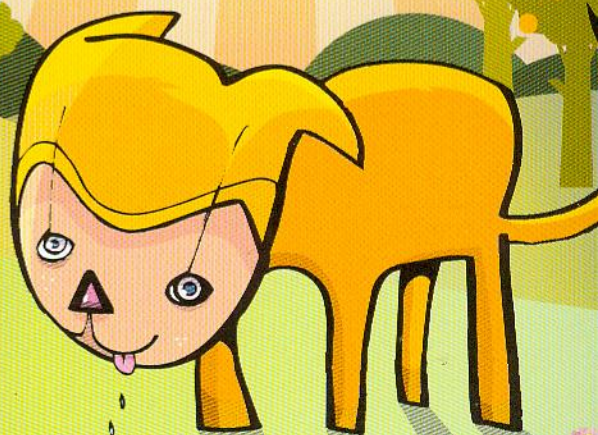
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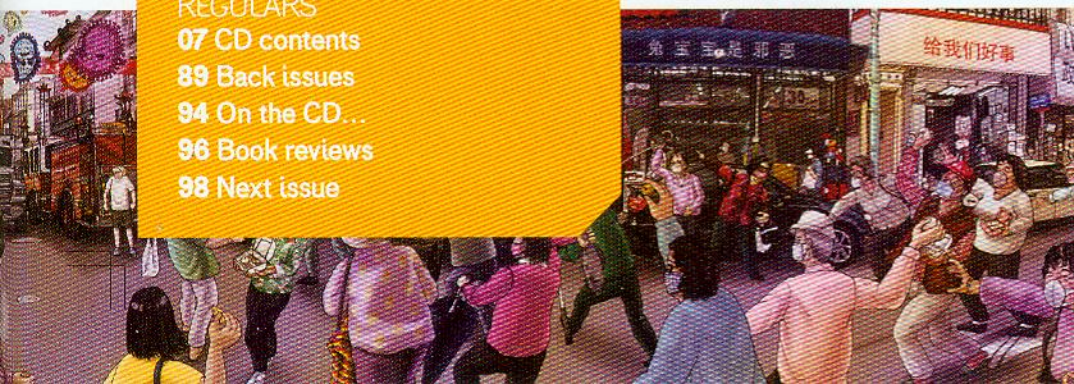
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FULL PROJECT

One brief, three very different illustration styles...

ILLUSTRATION SKILLS

Our three illustrators have been asked to create an image for use as a double-page spread in a Sunday paper's glossy science supplement. The brief calls for a composition to depict the first manned mission to

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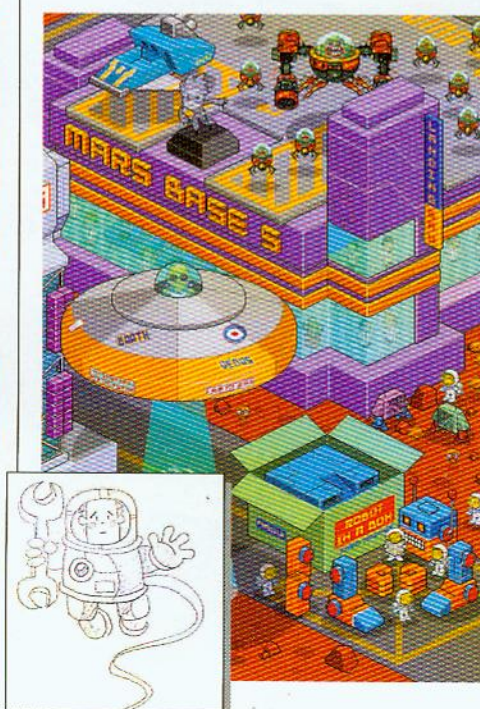
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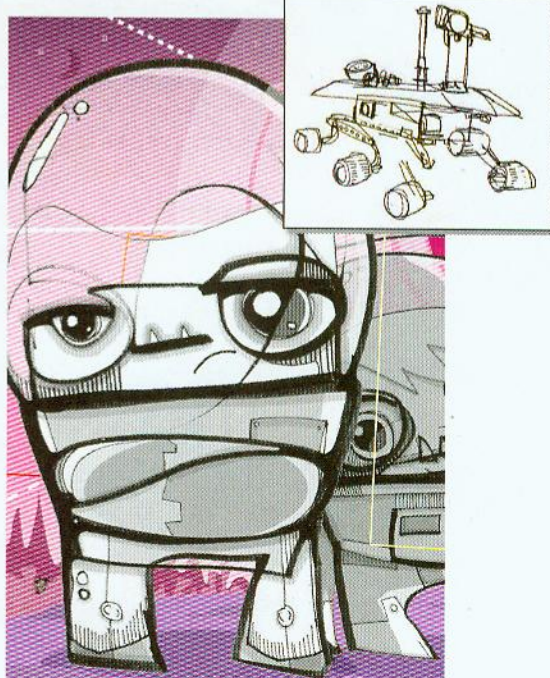
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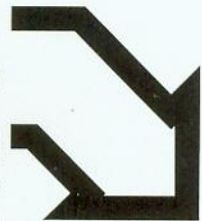
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Programs and plug-ins that'll help advance your illustration skills...

DUAL DEMO

Adobe Illustrator 10

The industry-standard vector graphics software defines the future of vector graphics for efficiently publishing artwork on the Web, in print, and elsewhere. You can produce superb Web graphics using symbols and innovative slicing options, and explore creative ideas with live distortion tools. *Illustrator* is used to produce vector spacemen in Jon Burgerman's Mars Mission tutorial starting on page 54

PLUG-IN DEMO

SymmetryWorks 2

This *Illustrator* plug-in can be used to create tiled patterns without seams or borders. Find out more about *SymmetryWorks* and follow our three-step tutorial on page 94

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3D-Tiger

This great little plug-in converts 3D models into vector artwork. Turn to page 95 to find out how to use it with 3D objects you've created or downloaded from the Web

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A whole host of plug-ins for use with *Illustrator*, including Panopticum Vectorizer, which turns images into vectors; and Isometric Line Tool, which enables you to draw straight lines at constrained angles

21 Photoshop plug-ins

This selection of plug-ins includes EyeCandy 4000, which offers a range of excellent textures and effects; and Redfield Plug-ins, a set of geometric pattern-generating and distortion algorithms

Project files

All the files you need to follow Jason Cook's *Photoshop* tutorial are available on the CD. You'll find them in a folder entitled Tutorial\Jason Cook. His step-by-step project starts on page 24

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Future Publishing Ltd, FREEPOST, BS4900, Somerton, Somerset, TA11 7B
[t] Customer hotline: 0870 444 8455
[f] 01458 271 146
[e] ca.subs@futurenet.co.uk

Editorial [t] 01225 442 244

Gillian Roach editor
[e] gillian.roach@futurenet.co.uk
Ashley Young acting production editor
[e] casproduction@futurenet.co.uk
Matthew Harvey art editor
[e] matthew.harvey@futurenet.co.uk
Matt Gallimore senior CD editor
[e] matt.gallimore@futurenet.co.uk
Joseph Russ CD editor
[e] joseph.russ@futurenet.co.uk

CD problems [t] 01225 822 743

Technical support: ca.support@futurenet.co.uk

Contributors

Cover: Jon Burgerman [w] www.jonburgerman.com
Illustrations: Jon Burgerman, Jason Cook, Gary Lucken, Lawrence Zeegen
Editorial: Graeme Aymer, Jon Burgerman, Jason Cook, Craig Greenwell, David Howell, Gary Lucken, Mark Penfold, Ed Ricketts, Garick Webster, Jonathan Wright, Susan Wright and Lawrence Zeegen
Printed at: TPL Printers (UK) Ltd.

Contact

Computer Arts Projects, Future Publishing,
30 Monmouth Street, Bath BA1 2BW [t] 01225 442 244
[f] 01225 732 295 [t] ISDN: 01225 789 293
[w] www.computerarts.co.uk

Advertising [t] 01225 442 244

Rob Wittmaak senior portfolio ad manager
[e] rob.wittmaak@futurenet.co.uk
Bryony Watts senior account executive
[e] bryony.watts@futurenet.co.uk
Andrew Healy senior account executive
[e] andrew.healy@futurenet.co.uk
Lee Rossiter senior account executive
[e] lee.rossiter@futurenet.co.uk

Tony Marshall classified sales executive
[e] tony.marshall@futurenet.co.uk

Production

Katty Pigott production coordinator

Overseas licensing [t] 01225 442 244
[e] simon.wear@futurenet.co.uk 01225 442 244

Management

Steve Jarratt group senior editor
Sheena Pittaway publisher
John Weir publishing director

Distribution

Seymour Distribution, 86 Newman St, London W1T 3EX
[t] 0207 396 8000
Jamie Malley circulation manager
[e] jamie.malley@futurenet.co.uk

The Future Network

Roger Parry non-executive chairman
Greg Ingham chief executive
Colin Morrison coo and managing director, UK
John Bowman group finance director



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Illustration now!

Digital illustration didn't just appear overnight; it took small groups of like-minded, creative, artistic individuals with foresight and ambition to step out into the unknown, to push, cajole and force the beast of illustration out into the light. We investigate some of the people and places involved in thrashing a digital pathway through contemporary illustration, and attempt to answer questions about the future for image-making in the digital world...

I can envisage a time when we'll all need our own individual Macs," stated John Warwicker in an interview with *Graphics International Magazine* back

in 1992. Warwicker, a key member and driving force behind 90s design heroes Tomato, was sticking his neck out. Really, rewind just 11 short years and the creative world was a very different place – the idea that designers would all be slaves to the screen was pretty radical. Even more radical was the thought that illustrators would, at some point, come in from the cold and boot up alongside the designer. But this is exactly what illustrators did – some through choice, some through necessity – and the results have redefined illustration over the past ten years.

Even before 1992 the signs were there. Dan Fern, then head of the Illustration Masters course at the Royal College of Art, had laid out one or two challenges for the discipline in 1987 in the catalogue for *Breakthrough*, an exhibition celebrating 25 years of illustration at the RCA. Fern had seen the future, a full five years before Warwicker had dreamt of having his own kit, recognising that "one of the most interesting and challenging tasks awaiting creative artists over the next few years is to

invent a new aesthetic for the computer-generated image".

Interestingly, Warwicker and his company, Vivid ID, had been part of the team that designed this exhibition, along with the Thunder Jockeys, but more on them later.

Celebrating the Seventies

Breakthrough looked back, as well as forward, at the glory years of illustration at the RCA, particularly the emergence of a raw new talent that had dragged itself into the limelight in the slipstream created by punk. Outside of the RCA, Jamie Reid's cut-and-paste-ransom-note-graphics for the Sex Pistols owed more to the copier than the computer in 1977, but his approach allowed illustration the opportunity to take risks while ushering in an era of more radical and political work, evident in the *Breakthrough* exhibition.

Ten years before *Breakthrough*, at the fag end of the 1970s, Fern had recognised the importance of this new fired-up, angry yet fiercely committed approach, typified by his own graduates, Robert Mason (now Head of Illustration at Norwich School of Art), Russell Mills (long-term collaborator of Brian Eno and visiting lecturer to Leeds Metropolitan University) and Ian >



Illustration: Jan Burpman (M) www.janburpman.com



George Snow was one of the first illustrators to start developing design software. Find out about his training courses at www.3d3world.com



A recent digital image by George Snow.

Pollock (best known for his stunted, twisted figures for Shakespearean classics). A rumour documented in the Rick Poyner book on Dan Fern, *Works with Paper*, says Fern had set fire to all the work he had produced prior to punk. The late 70s were clearly an important time for illustration. In fact, the foundation stones for what would become the first tentative steps towards the digital, ten years later in 1987, were being set with a new approach to image-making and illustration through collage and montage.

Eighties equipment

At the same time as the doors opened on *Breakthrough* in 1987, students within the RCA illustration department had access to a unique set-up. As the only entirely post-graduate art and design institution in the world, the RCA had clout, and Canon equipped a studio, as a lab, in the most creative sense of the word. Providing the first generation colour laser photocopier – the CLC – and free copies to those intent on pushing the frontiers of the machine's creative capabilities, here was a chance to see just how innovative students and staff could be with a piece of kit more familiar to the office or copy shop (if you could even find one) than the studio.

Cutting and pasting, collage and montage could never be the same again. Early adopters of the Canon CLC could resize originals, distort their shape, alter colours, create negatives, utilising an unprecedented range of image manipulation tools.

Being technically aware of the equipment became vital to getting the most from the kit. A precedent – the union of creativity and digital expertise – was being set for the future by a relatively small group of individuals led by Simon Larbalestier, [\[w\] www.simon-larbalestier.co.uk](http://www.simon-larbalestier.co.uk), best known for his album sleeve photographic and illustrative collage work for seminal 80s band The Pixies. In his hugely influential book of the time, *The Art and Craft of Montage*, Larbalestier, as an RCA Research Fellow, investigated numerous techniques and approaches that pushed the limits of the CLC and other copying devices prior to the arrival of the computer. But his book came with a warning from Larbalestier: "This book doesn't advocate the theory that the more equipment you have access to, the better and more resolved your image will become, since without a strong concept in the first place all that you will achieve is a beautiful surface, empty of content, emotion and provocative thought..." Wise words indeed.

Around the same time as the early experiments into digital collage, an agency sprang up that was to take a fresh approach to representing contemporary British illustration. Andrew Conningsby had set up Debut Art, [\[w\] www.debutart.co.uk](http://www.debutart.co.uk), in 1985 with a range of artists hand-picked from a crop of new collage-based image-makers. Within two years, he had recognised what was starting to emerge. "There was a move towards collage. With the Canon colour copiers copying at three quid a throw, a new direction

1970 Ken Thompson and Dennis Ritchie begin building the UNIX operating system, although it doesn't get to the personal computer market for another ten years.

1973 IBM creates the first true sealed hard disk drive. The drive is called the 'Winchester' after the rifle of the same name.

1977 The Apple 11 debuts at the first West Coast Computer Fair in San Francisco. With built-in keyboard, graphics display and an audio cassette drive for storage, it costs \$1298 with 4KB of RAM. The same year sees the Commodore PET, also with 4KB of RAM, but at almost half the price of the Apple 11: \$795.

Timeline

Find out how we got to where we are today, by following over 30 years of digital development...

1971 Intel builds a chip for a new calculator, but with massive overkill creates the first single chip microprocessor – the 4-bit Intel 4004.

1975 The MITS Altair is the first personal computer to warrant serious attention. Selling 2000 at only \$439 each, they were self-assembly and required expansion cards to run a keyboard and monitor.

1977 Bill Gates and Paul Allen start Microsoft, setting up shop in Albuquerque in New Mexico.

1981 IBM launches the first PC, based on an open architecture that could be expanded upon in the future. It cost \$3000 but had a huge 64KB of RAM. IBM licenses DOS from a tiny company called Microsoft, a decision regretted for years after.

was taking place. When you consider a basic set-up of computer, monitor, scanner and printer was around £10k, it was hardly surprising that most stuck with the CLC for some time," explains Conningsby. Many of the Debut Art artists moved onto the CLC from what Conningsby describes as the 'lick and stick' of hand-crafted collage illustration. These very same artists would make the move to the computer as technology improved and prices fell.

The first digital illustrators

Back over at the RCA, many students were starting to expand their repertoire, rolling their sleeves up and getting their hands dirty investigating the Quantel Paintbox. Located in a special unit, this kit was intended for early TV post-production work, but when illustration students got their heads round it and hands on it, the first digitally produced computer images emerged from the course. Dan Fern's clear vision for the department at the time supported this early experimental approach. "Our aim is not to produce graduates that slip neatly into the market – that would be comparatively easy... however, to produce illustrators who at the time of their graduation often look precariously offbeat and esoteric, but are daring and committed artists capable of actually changing the market, that's altogether more interesting," explained Fern at a conference on illustration in Aspen, Colorado in 1986. These early fumbleings into image-making with the Quantel assisted in

the creation of the first digital/computer illustrators to graduate the institution with work and images that did not fit the expectations of the commercial design world.

This was a problem others faced at the same time too. "My work didn't fit; people just weren't ready for it, for ages," explains Andy Martin, [w] www.andymartin.uk.com, now a successful illustrator and filmmaker. Ten years previously, after a short design course in Derby that he didn't complete, Martin had made the move to London. "It was 1977 and the 'Summer of Punk', there was a sense that change was in the air," he explains. He subsequently took a design job that led on to becoming Art Editor at the *New Musical Express*, "laying out front covers with pictures of cheesy mid-80s bands", and then quitting in 1985 to go solo "because I could see something was going to happen". Introduced to the Apple Macintosh by someone high within the company during an Apple event in London, Martin was given a Mac with 128k of RAM to, as he explains, "play with, experiment with and just see what I could do. I was just taken down to a PR office and given the kit. It would have cost me an arm and a leg, and they just said 'take it', how cool was that?" He recalls his first Mac whispering the words "look after me and I'll look after you" and shudders at the next fact: "Sure enough, after 18 years and around £35,000 spent on several machines, I'm still using one!"

Despite Martin's absolute dedication to creating early digital art, he credits another illustrator with much of the >

Apple icon

Celebrating the fruits of Apple's labours...

From a start-up in a Californian garage in 1976 to an annual turnover of millions and the launch of "the world's fastest personal computer and the first with a 64-bit processor" – the G5 – Apple has come a long way. It all began back in that garage belonging to the parents of Steve Jobs, when he sold his Volkswagen camper van, and his partner Stephen Wozniak, or Woz, sold his programmable calculator to fund the building of the first Apple product, the Apple 1 circuit board. It featured a wooden frame and had to be constructed by the purchaser, 50 were offered for sale.

Right from the start, Apple would think differently. Early advertising campaigns described the product as "the computer for the rest of us", and the original development team is often regarded as radical. The idea that the invention of the personal computer owed as much to a desire to oppose centralised authority and technology, as it did to the invention of the microprocessor, is a theory that has left Apple with a particularly strong image. For the computer that brought "power to the people", Apple's core users are still regarded as creative types, free thinkers and free spirits.



1982 Commodore introduces the first truly price-friendly computer at \$400 and millions buy it, 22 million to be precise. It's the first home personal computer to have 64KB of RAM installed, allowing the home gaming market to explode.

1984 The advertising campaign for the Mac, '1984' directed by Ridley Scott (*Alien* and *Blade Runner*), shows during the Super Bowl in the US. The 60-second commercial airs only once, but the image of a female athlete smashing an image of Big Brother in front of grey-suited men demonstrates Apple as an alternative to IBM.

1984 *MacPaint*, created by Apple's Bill Atkinson, launches with the new Mac. It's the first software application available to offer drawing and painting capabilities, creating a landmark for early digital illustrators.

1984 In January, Apple launches the first Macintosh, with its graphical user interface, creating a bigger stir than the IBM PC did in 1981. The computer revolutionises the way people use computers. For \$2495, the user got 128KB of RAM!

1984 *MacWrite* ships with the first Macs too, demonstrating that WYSIWYG (What You See Is What You Get) word processing really worked.

1985 Paul Brainard at Aldus introduces *Pagemaker* for the Macintosh, creating the start of the desktop publishing era. The combination of a Macintosh, *Pagemaker* and an Apple LaserWriter dominates the publishing industry. Aldus is later bought by Adobe in 1994.

Find out all about post-grad courses at the Royal College of Art at [w] www.rca.ac.uk



discoveries made in digital image-making in London at the time. "George was the man! George is where I came from, way before you could do it on a Mac, he was there developing stuff, leading the way." The George in question is George Snow,

[w] www.3d3world.com. Snow had been working as an illustrator for a number of years, but was quick to spot what he believed would be an exciting new development that would change the way images were to be made. Recalling his first introduction to the digital at the Association of Illustrators Conference, *Drawing the Line*, in 1999, he remembered: "In 1981 I discovered the Sinclair Spectrum and it was my first encounter with a computer. Pretty much from that day onwards I just totally abandoned illustration. I lost interest in it – I didn't see it as relevant." What did interest Snow was the desire to create software applications that could aid artists to create images using this new digital technology. "I immersed myself in programming computers, just programming, for the sheer hell of it, for the best part of three years. The thing about computer programming is that it can get kind of dull and nobody really understands the work that you've done. You have to show it to the world," explains Snow.

The dawn of the digital revolution was under way: RCA students and graduates were becoming more engaged in the digital; Debut Art was moments away from taking on its first digital artist; George Snow was developing software; Andy

Martin was experimenting with free Apple kit; and countless others across the UK, Europe and the USA were also moving in on the territory...

Jockeying for recognition

Andrew Conningsby of Debut Art recalls his take on the moment: "The very first people I saw doing digital work were the Thunder Jockeys in 87 or 88. They got there first, very digital-looking, very of the moment." Graham Elliot and John England went under the name of the Thunder Jockeys and for a short time their flame burnt bright in contemporary illustration. Having met while studying together at the RCA, their antics over a period of a few years became legendary. For example, they spent the entire RCA student union party budget on tonnes of sand to shovel in a foot deep for a 'beach party', and turned up for an interview at Saatchi and Saatchi with a goat and a Dalmatian. The Thunder Jockeys later, and almost inevitably, diversified into pop promo direction and advertising, but it was their disregard for the 'correct way of doing things' that led to some early, yet very creative and innovative, image-making using digital technology.

At about the same time, Andy Martin started picking up illustration rather than design work and it seemed like a small group of people were ahead of the game. "I was just learning about making illustration by doing it in publications," says

1985 The Commodore Amiga introduces the world to the potential of multimedia, but doesn't realise it. The machine is so far ahead of its time that even Commodore wasn't sure what to do with it and so shipped it as a games machine. Few people realised the importance of advanced graphics and sound combined with its multi-task operating system and graphical user system.

1985 Windows appears for the first time, before going through numerous updates and changes. During the same year the PostScript format is created for Adobe by John Warnock.

1986 More new formats arrive with the TIFF created and introduced by Aldus and the GIF format created by CompuServe, and 12 months later the PICT format is developed and brought in by Apple.

1987 Apple launches the first colour Macintosh, the Mac II, able to display 256 colours at once from a palette of 16 million. Apple did away with the built-in 9-inch screen in favour of the 14-inch separate colour monitor. This machine with 1MB of RAM and a 40MB hard disk came in at just under \$5500!

1986 The Intel 80386 Processor ships, bringing in a 32-bit architecture capable of breaking the 640KB memory barrier, as well as running software written for graphical interfaces.

Martin. "I did the second ever cover for MacUser way back when. I was doing stuff for *Blueprint* magazine, working all over the place. Half the time was spent educating art directors, the other half was just figuring out how to do it." And then things took off, as Martin explains: "It was like a virus, one moment there were just a few of us around and then it went bang and suddenly everyone, it seemed, started to discover the same thing at the same time." Debut Art nurtured its own artists making the transition from paper to screen. "Gone Loco was the first," explains Conningsby, "because he is that kind of guy, and then followed Andy White and Sarah Jones..."

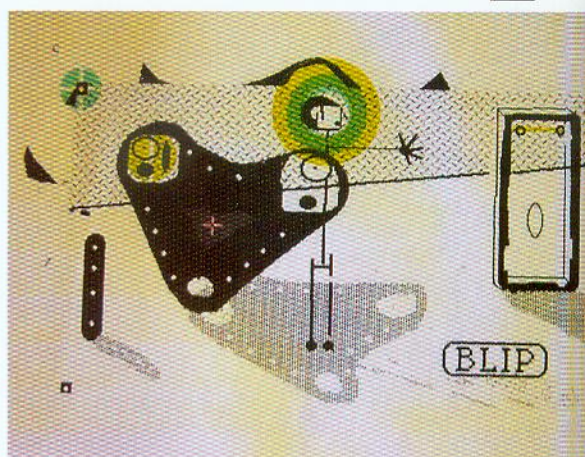
George Snow recalls his first few years: "I borrowed some cash from the bank and bought an early IBM PC just to play with it. I think I told the bank it would improve productivity. I installed or attached a Puto Graphics Card that had an Intel 1888 chip so the two could talk to one another and then I mixed and messed about with video. All on 64k software!" Snow, having made the move from programming to video direction, and then back to image-making, remembers what happened next: "Along came *Photoshop* and I had a whole new set of tools. All of a sudden I could blur the edges of an image, I could make areas of my collage transparent. There was in those early days, as I think everybody knows, a real problem being an artist and working on a computer. The software itself dictated very much what the final result looked like. You could look at computer-based art and say

"he used this tool, she used that tool". They knew the techniques, they knew the plug-ins." Andy Martin is more dismissive of much of the work from that period. "It all went safe, it all went anodyne, cut-out template Photoshop bollocks," he rants. Snow admits that things have since changed: "Now it's got to the stage where they're a great deal more sophisticated. I think the software industry has really grown up around artists and their demands."

What next?

So where next for digital illustration? A good question and one not easily answered. Hardware and software will continue to develop, processors will clock faster and faster speeds, software will offer more and more options; that we can be sure of. The big leaps in technology will still happen too. The hand-in-glove interface that Tom Cruise utilises in *The Minority Report*, however far fetched it may seem now, will look as dated as Dateks in less than 30 years time. Think about it, less than 30 years ago a pocket calculator was considered ground-breaking technology; 15 years ago, so was the mobile phone.

Hardware will get smaller or at least the inner workings will. Nanotechnology – the ability scientists have to move atoms around and to create tiny electronic switches – will soon advance to the creation of ultra-tiny super-mini chips. There ➤



Top: Andy Martin's original digital illustration created in *MacPaint* under the studio name of 'Studio Espresso' in 1985. Above: Martin did this illustration for the *Independent* Sunday newspaper in 2003.

1990 After striking a deal and with 10 months of development with *ImagePro* behind it, Adobe launches *Photoshop*. It goes on to dominate the photo-editing market.

1991 Apple launches System 7 of its operating system and offers multitasking, virtual memory and the balloon help feature. Although it was the improved TrueType scalable font that created the low cost colour inkjet printer market, because with no need for PostScript, the domination of laser printers ended.

1987 Brothers Thomas and John Knoll start to develop basic image manipulation software called *Display*. The refined version becomes *ImagePro*, and *BarneyScan* ships 200 copies with their slide scanner.

1990 Microsoft launches *Windows 3*, a much faster version of the interface and with it applications that it could run. Microsoft *Word* and *Excel* dominate both the word processing and spreadsheet markets.

1991 With the emergence of high-powered 3D graphics workstations from companies such as Silicon Graphics, new uses begin to emerge for interactive 3D graphics. Computer Aided Design (CAD) and 3D animations for special effects being the most popular, although other uses included Virtual Reality (VR).

Debut Art was set up in 1985 by a group of collage-based image-makers. Visit the Website at [w] www.debutart.co.uk



is, however, a limit to the size that we can reduce our interfaces down to, because our hands and fingers are not getting any smaller. As long as we work with keyboards, the keyboards have to remain at an optimum size. The on-screen PDA keyboard is an example of the shrinking digital world really not working – the new mobile by NEC, the e608, reduces a QWERTY keyboard to the size of... well, to fit on a rather large mobile phone actually. Try to imagine a keyboard-less computer and you have the MS Tablet PC, but that feels like a step back rather than forward, for some reason. Artists and illustrators have used drawing tablets for some time – they get more and more touch-sensitive with each release, but they can get no smaller in their current incarnation. There will have to be a radical re-think if stuff is going to work differently in the future.

If the inner-workings get smaller, they will get lighter too, and that may mean truly portable kit if someone can figure out how to get around the monitor issue. The 17" Powerbook looks fantastic, but imagine lugging that beast around. Take the power of the Powerbook, set it inside a PDA size device that could, like your average data-projector, project a screen onto any flat surface. Rumour has it that Ericsson/Sony developed a mobile phone that could do just that, but could not get a battery to last more than 20 minutes. But they are thinking about it.

Software will continue to develop, but breakthroughs into genuinely new applications still occur very infrequently. Think

browsers, think email applications; both have helped us change the way we use our computers in the last five to ten years. Voice recognition software has been around for a while now too, but has not made the breakthrough into image creation. Try getting your head around a convergence of IBM's ViaVoice and Photoshop – it could happen.

Forget hardware and software, true artists and innovators will continue to push boundaries whatever kit is available. Interestingly, the focus has shifted away from how illustrators are using the technology to what they're doing with it – back to solving problems with visual solutions, back to creating work with a purpose, with a point of view. George Snow agrees: "After everything that's happened in digital imaging, we still need good ideas, bloody good ideas, we still need to get a message across." The glut of fashionable vector drawings that anyone and everyone was 'creating' and every client, it seems, was happy to use was a passing fad, as were the over-complicated, multi-layered digital collages of a few years previously. Now, the very best clients want something unique. They want to use the illustrator as a craftsman – the software is taking a back seat and it's more about creativity than technology.

Swinging back to the Sixties

For a new generation of image-makers, having grown up with a computer in the classroom and another in their bedroom, the

1991-92 Some new formats evolve, including QuickTime from Apple as well as the JPEG and MPEG formats for saving and viewing files. Kodak launches the Photo CD at this time too.

1994 Apple's Power Mac is introduced and within a year over a million are sold. A basic machine with 8MB of RAM, 250MB hard disk, a CD-ROM drive and a 14" colour monitor costs \$2289.

1995 Following one of the biggest global marketing campaigns in the history of advertising, Microsoft Windows '95 debuts on 24 August 24. Including full networking support and tools for accessing the Internet, Windows also resulted in improved performance too.

1995 This year sees the launch of the Sony PlayStation, with gaming taken to new levels, along with the expectation of the gamers themselves.

1993 The PowerPC launches this year giving users a much-needed boost as high performance no longer means high prices. The PowerPC is a three-way invention by Apple, IBM and Motorola, once all bitter enemies.

1994 The www revolution gets fully under way as the number of hosts hits two million and the number of Websites reaches 600. The White House and United Nations come online and Netscape develops from a 'user-friendly graphical front end'.

1995 Pixar releases the movie *Toy Story*, the first feature film fully generated using 3D computer graphics, previously having been used for short special effect sequences. High-end Silicon Graphics workstations were used with more than 400 3D models and 2000 texture maps, taking over ten man years to complete.

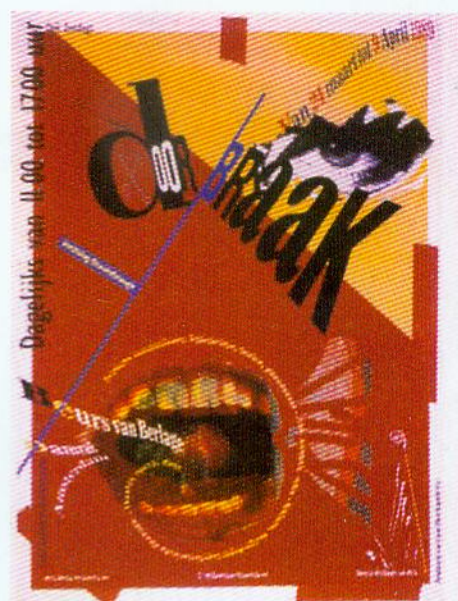
1995 MP3 is developed and accepted as the standard compression platform for storing music digitally.

allure of the digital is far less compelling than it was for their older brothers and sisters. More fascinating for this group is an increasingly hands-on craft where the evidence of the hand is more visible. Although the digital is playing a role in transmitting the work via email, storing the work via the Web or DVD, that role is now really just part of a bigger process. In vogue, right now, is to create work with a nod back to the 60s, work with a retro feel that encompasses older techniques and older stylistic leanings. The roughly drawn mark, the felt-tip, the 'pop-a-point' pencil aesthetic has returned, but software will soon catch up. Software developers will show us how we need not hunt down materials via the old art shop, but just tune in and click on the next generation of tools within our chosen applications. George Snow is not so sure: "I can't imagine that software can get much better than it is right now, although I still spend as much time working as a technician as I do an artist; upgrades fall over, new kit comes out that doesn't talk to old kit, same old problems," he sighs. "However," he adds, "it doesn't cost what it used to. Back in 1990 I spent £250,000 on hardware and software; last year I managed on about £6,000."

Whatever the associated costs, it's vital to remember that styles will change, fashions in illustration will come and go. "Creativity is about diversity," explains Conningsby, offering the Debut Art explanation to the wealth of visual approaches currently being practiced. Andy Martin goes one step further,

seeing it differently and recognising a shift away from categorisation: "This is a very exciting time to be working, and it's coincided with the breakdown of old categories within the art and design world. I look forward to a future where this openness will bring new hybrid forms of image-making." It may be that the days of the freelance illustrator, as specialist, are numbered. It may be that a broader range of skills will need to be developed to tap into increasingly less defined markets. Martin, in the sleeve notes accompanying the release of his first DVD of digital film/motion graphics, *Earth Bonding Point*, explains: "Photography, graphics, colour, narrative, composition and audio have all combined [in his own work] thanks to digital technology, but also because I've tried to keep an open mind." George Snow, now running his own lab/training outfit in Italy, 3G3 World, agrees: "Now it is a very, very sophisticated mix. I envisage a return to drawing and painting, using materials by hand, but in combination with, what I see as, a 100 per cent digital future."

Just to put it all in to some kind of perspective, in the grand scheme of things, it's worth remembering that the digital advances made in the last 20 or so years have been just a tiny flicker in the overall history of man and his desire to create images. From the first mark on the wall of a cave 10,000BC to the cutting edge digital images produced at the dawn of the 21st Century, the power of the picture continues to excite. **cap**



An early digital image by Thunder Jockeys, aka Graham Elliot and John England.

Lawrence Zeegen is an illustrator and educator. He has worked on commissions for numerous newspapers and magazines, for design companies and advertising agencies. He is Academic Programme Leader for Communication and Media Arts at the University of Brighton. Zeegen's work can be viewed at www.zeegen.com

1996 The year that eBay launches, and by 2003 claims over 50 million registered users worldwide. It's one of the most significant technology companies created in the past ten years.

1998 Software introduced this year includes *Alias Maya*, which by 2003 has been used to create special effects in almost every film nominated by the Academy of Motion Picture Arts and Sciences in the Best Visual Effects category.

1999 The Melissa computer virus spreads through *Word* documents sent as attachments. It then forwards itself to 50 people in the user's Outlook address book and infects other *Word* documents and mails them out as attachments. Melissa spreads faster than any other previous virus.

2001 This year sees the introduction of the Microsoft Xbox and Nintendo Game Cube as well as Apple's iPod MP3 player. A classic year for gadgets as well as being the year that Apple's OSX starts to gain in strength after debuting the year before.

1997 DVD technology is announced, and within a few years can be played and recorded on personal computers.

1998 Apple launches the iMac based on the G3 chip launched in the professional range the year before. The iMac ships with a 56k modem, and within six weeks sells 278,000, making it the fastest-selling Macintosh ever.

2000 A year on from launching the G4, Apple announces the arrival of the G4 Cube. Despite its cute looks and small footprint, it fails in a spectacular fashion.

2002 Apple launches *iLife*, bundled software that includes *iTunes*, *iPhoto*, *iMovie* and *iDVD* in a push towards its concept for the future of the Apple as digital-hub.

Mars Mission – Photoshop

Render some 3D elements then combine them in *Photoshop* to create the look and feel of being on planet Mars...

Based on a fictional commission for a glossy Sunday newspaper science supplement, we take you through the steps of building a layered *Photoshop* illustration from a number of 3D rendered elements. The initial brief was to create a double-page illustration of what it would be like to be on Mars or during the lead-up to landing on it.

One element that this illustration focuses on is the death of a crew member's spouse back on Earth, which may lead to lots of speculation about his psychological state. The illustration conveys the distraught look of the astronaut and how he has to carry on working towards one of the greatest achievements in man's history regardless of his personal circumstances. The illustration also focuses on the building of a settlement in the background, which conveys the job the astronaut still has to do on Mars. Also, by combining a very red palette and lots of dirt effects, we try to get the message across that it's quite a harsh place, and one where the astronaut is having to deal with his own severe emotions.

Using a number of 3D packages to generate the objects, this tutorial gives you the option to import the 3D files into any 3D application and render them in a similar way. We don't focus on the modelling aspect, but we do show you how to get the elements ready for combining in *Photoshop*. The tutorial assumes you have a basic understanding of *Photoshop* and a 3D application, and that you know how to import and render DXF files plus apply lights and textures.

The tutorial begins on page 24, but first we'll introduce you to the illustrator, Jason Cook, and show you some of his early sketches for this project. ➤



Expertise provided by Jason Cook, in the Jaroslav style. You can contact Jason at ejc@jacey.com or visit his Website at [\[w\] www.jasoncook.co.uk](http://www.jasoncook.co.uk)



Files on disc

All the components needed to support this tutorial (including the 3D renderings) can be found on the cover CD in the Tutorial: Jason Cook folder.

Part 1: Basic 3D elements

Create the 3D elements that'll be the basis of your illustration...

Live commission

When working to a live commission, timing and speed is of the utmost importance. The majority of newspaper and magazine editorial work is turned around extremely quickly, in one to four days. Occasionally you may get the luxury of having over a week, but that's very rare indeed.

DXF files

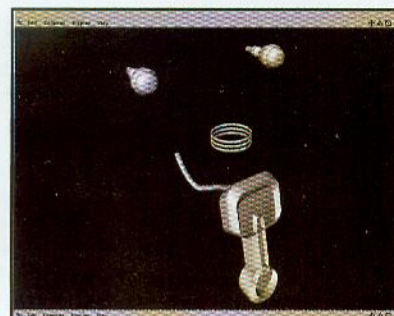
The DXF file was originally created by Autodesk to represent 3D models and scenes built with AutoCAD. It's now quite a generic file format and most 3D packages can open it. As the first section of the tutorial doesn't show you how to model the elements (there just isn't enough space in this tutorial) we've given you the option to use the original DXF files within your own 3D application. Importing DXF files can be a time-consuming process if they're complicated or your computer is old and slow.



1 Start by creating the astronaut's helmet in a 3D package, trying to stay away from the usual NASA-type helmet. We've given our design a more futuristic look. If you haven't got a 3D package, use the *Cinema 4D* file named *helmet.c4d* or the standard DXF file named *helmet.dxf* from our cover CD. The DXF file can be used with the majority of 3D software applications.



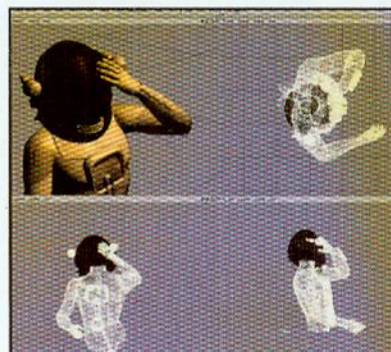
2 In *Poser*, create a torso using the *Poser 3* male figure, then use the Hierarchy Window editor to hide certain body parts, such as the head and legs. This helps to reduce file size and render time when importing it into another 3D application. You may prefer to use *Poser* for rendering all the elements because you can import DXF files into the application. See *torso.dxf* and the *Poser* file *torso.pzz* on the cover CD.



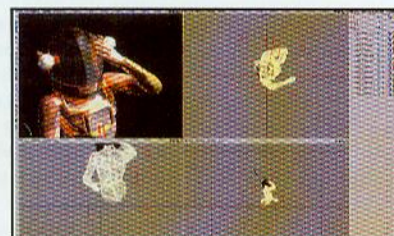
3 Back in your modelling package create more 3D elements that can be placed on the astronaut's torso and helmet, such as a life support system for his chest, a set of lights for his helmet and other elements to jazz up the appearance of the helmet. See *elements.c4d* and *elements.dxf* on the cover CD.



4 Before composing all your 3D elements, prepare an environment map that'll be reflected in the chrome texture or shader (depending on what software you use). This image was prepared in *Photoshop* and is just a photograph of a sky with clouds, which has been manipulated with Colour Balance and Hue and Saturation. See *orangesky.jpg* on the cover CD.



5 Then import all the 3D elements of the astronaut and compose them as above. You might want to change the posture of the astronaut or even make him female. See the *astronaut.c4d* or *astronaut.dxf* files on the cover CD.



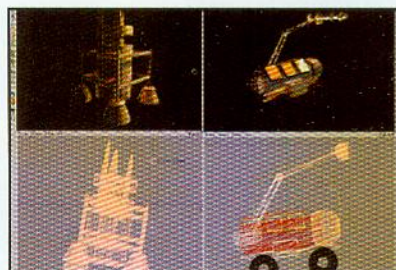
6 Add a camera and a simple omni light or light source to frame and compose the astronaut as above. Also add chrome shaders to the 3D elements and the environment map. Try applying different types of chrome. You could use a darker chrome for the helmet, which will help you in *Photoshop* when you get round to applying the facial expression of the astronaut. When rendering your models, always render with an alpha channel so you can make a clean selection in *Photoshop* for cutting and pasting. For the full render, see *Astronaut.tif* on the CD.

Part 2: Background elements

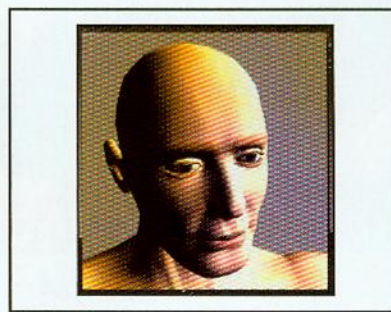
Now create the background 3D objects of the scene: the settlement, the rover and the Martian landscape...

Fast work

As you'll see from Part 1 of this tutorial, you can render the elements in all kinds of applications. Having a number of computers on which to render the models helps, and it speeds up the process. Also, you may find that you don't need to spend ages lighting a 3D scene when you can comp all the elements together in *Photoshop* and produce a much more speedy and effective result.



1 Open *rover.dxf* or *rover.c4d* from the cover CD. Render up the rover vehicle similar to the above image, using chrome textures and environment shaders. See *rover.tif* for the final render. Then use *base.dxf* or *base.c4d* to render the above base. Apply similar lights and shaders to your previous models. You may want to make the base more like a construction site to give the impression that the astronauts are building it. See *base.tif* for the final render.



2 Use a *Poser 3* male nude figure and focus on the head, placing lights to the right of the figure to give the impression of the sun across the astronaut's face. See *head.pzz*, and *headren1.tif* for the final render. If you have a later version of *Poser*, use that to get more realistic features out of the *Poser* figure. We used Michael from Daz3d and a texture character from Renderosity.com.



3 Using the 3D landscape application, you can render up something similar to a landscape on Mars. Using lots of reds and oranges in the Colour palette will help here. On the CD, you'll find the original Bryce file, or you can use the DXF version named *terrain.dxf* and apply your own shader to it in your own 3D package. Alternatively, you could use *Poser* to render it.

Part 3: Creating layers in Photoshop

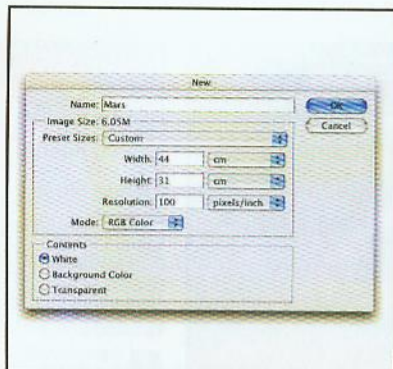
Take all the 3D elements that you've rendered, and layer and compose them in *Photoshop*...

Web searching

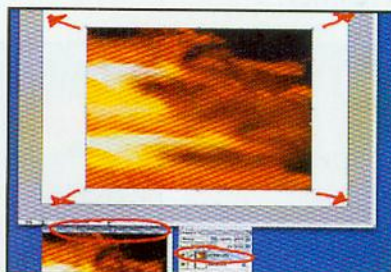
Sometimes the quickest way to find references is to do an image search on [w] www.altavista.com. For example, typing in 'Mars landscape' will bring up a whole host of reference material – much easier than going through the usual word search of a search engine.

Watch a DVD

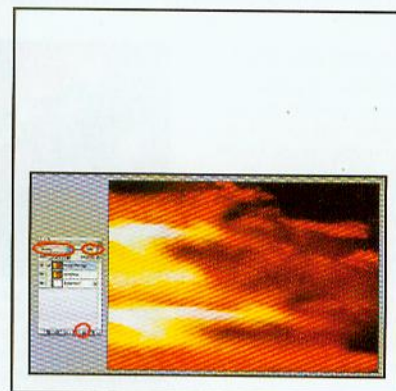
Sometimes it might be helpful looking through your DVD or film collection for artwork inspiration. We found that looking at the artwork for *End Of Days* and *Fight Club* and even *The Pledge* starring Jack Nicholson was a source of inspiration. And films like *Red Planet* and *Mission To Mars* were helpful. You could even go back to the 70s and check out *Martian Chronicles*.



1 Let's start by creating a new document. Go to File>New and set the preset drop-down box to Custom. Set the Width to 44cm and Height to 31cm. Set the Resolution to 100 pixels/inch and the colour mode to RGB. Contents should be set to White. Name the new document Mars1.psd and click OK.



2 Now open orangesky.jpg from the cover CD and Select>All. Then go to File>Copy and select the Mars1.psd document and Edit>Paste so that the orange sky JPEG is pasted into the Mars document. Make sure the Layers palette is in your workspace: Windows>Layer. Now select the layer in the Layers palette and double-click its name and rename the layer as 'Orange Sky'. Then go to Edit>Transform>Scale and drag the corner handles of the image to resize the layer so that it fills the entire document. Then press Enter to set the size. Save your file to your hard disk.



3 To make the sky more vibrant, duplicate the layer by dragging it down to the duplicate icon in the bottom of the Layers palette window. Then go to Filter>Gaussian Blur and add a radius of around 7.5 pixels. Then set blending mode to Overlay, and Opacity to around 44 per cent.



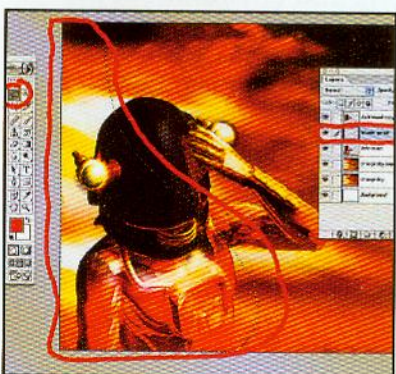
4 Open astronaut.tif and go to Select>Load Selection and then copy and paste the astronaut into the Mars document. Rename this new layer 'Astronaut' and scale down the layer and position it as in the above picture. Then save the Mars document again.



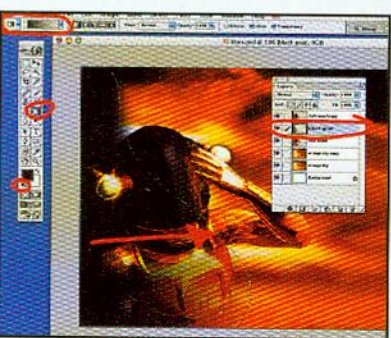
5 Now duplicate the Astronaut layer, then hide the copied layer by clicking the eye icon next to it so that it makes it disappear, then select the original Astronaut layer in the Layers palette. Now go to Image>Adjustment>Hue and Saturation. Select Colorize and set Hue to 358 and Saturation to 66. Click OK. Then set the blending mode to Hardlight and the Opacity to around 91 per cent.



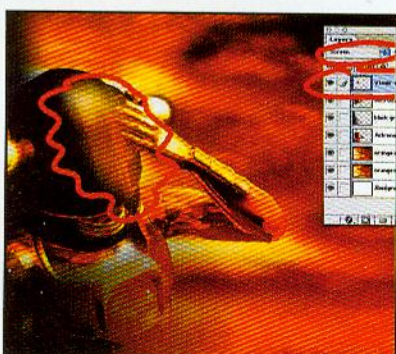
6 On the Astronaut copy layer go to Image>Adjust>Levels and set the middle box of the input levels to 0.56. Click OK. Then select the Eraser tool on the Tool palette and use a brush tip size of around 200 pixels for the eraser – this can be selected by Window>Brushes. You may have to create your own new brush if that size isn't available. Now erase the bottom part of the astronaut just below his helmet, making it nice and gradual.



7 The area behind the helmet is a bit too bright, so darken it off a bit to help the beams of light stand out more on the helmet when we come to put them on. Create a new layer between the original Astronaut layer and the copied one and call this 'Black Grad'. Use the Lasso tool to create a selection around the left side of the image.



8 Now select the Gradient tool and make sure your foreground colour is black. To do this, just click the tiny black and white icon at the bottom of the Tools palette. Then Select>Feather and set the Feather Radius to 33 pixels – this softens the edges of the selection. Then drag the cursor left to right over the selection to create a black gradient. Make sure that the background colour is transparent in the Gradient palette.



9 Now use the Lasso tool to copy a section of the original orange sky background and paste it as a top layer in the Layers palette. Position and scale it so it fits over the right side of the helmet. Using the Eraser tool, soften the edges and make it appear like a reflection on the helmet. Then set the blending mode to Screen. Once you've done that, name the layer 'visor reflection'.

Part 4: Adding lighting effects

It's time to incorporate the face from the *Poser* render and add the two beams of light coming from the side of the astronaut's helmet...

Change your mind

As you'll see, halfway through this section we decide to distort the whole image. Don't be afraid to change your initial composition if you find a way for it to work better. Let the client know what you plan to do and if they like it, 'go for it'. You can't always rough everything out at the beginning of the commission, and this is one of the joys of working in *Photoshop*. Always explore new possibilities and never stick to set ideas or formulas.



1 Create a new path by clicking the New Path Layer icon at the bottom of the Paths palette. Rename this new layer 'beam of light'. Select the Pen tool and by clicking the Pen on the Mars document draw a shape like the above. Now create a new layer at the top of the Layers palette and call it 'beam of light 1'. Make it a selection and feather the selection with a Feather Radius of 12 pixels. Switch to the Gradient tool and, using white as a foreground and a transparent background colour, create a gradient like the one above. Set the Opacity for that layer to about 83 per cent.



2 As with the previous step, create another beam of light for the left side of the helmet, using a new paths layer and image layer to create this. Call the layers 'beam of light 2'. Set the Opacity of the layer to about 88 per cent. Then save the Mars document.



3 Open headren.tif from the cover CD, then go to Select>Load Selection to create the selection around the head. Copy and paste the head into the Mars document and make sure it's the top layer of our Layers palette. Rename the layer with the head as 'head1' and then scale the head into the above position. Using the Eraser, erase parts of it as above and make the layer Opacity 68 per cent. Set the blending mode to Hardlight.



4 Now duplicate the head layer and Gaussian Blur the image with 9 pixels. Set the blending mode to Hardlight and Opacity to 47 per cent. Experiment with the layers of the head, trying to retain some of the features yet keeping the eyes the focus of the astronaut. Save the file.



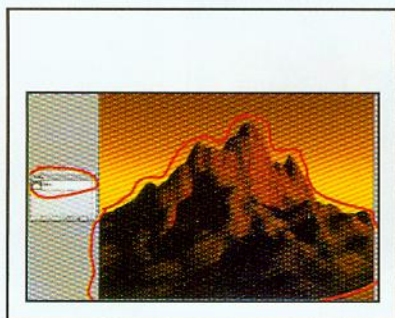
5 Now flatten the image layer (Flatten>Image) and resave the *Photoshop* document as Mars2.psd. Now Select>All and copy and paste the background image on itself and call the copied layer 'new background'. Using Image>Transform Distort, distort the layer like the above image to give the overall effect of the image a more dynamic look. Use the Eraser tool to fade away any sharp edges.



6 Duplicate this new background layer and Gaussian Blur it with a 9-pixel radius. Set the blending mode to Overlay and the Opacity to 29 per cent – this gives the image a more saturated red look. Using the Lasso tool soften the edges of the top of the astronaut's helmet and his raised arm around the elbow area. Don't forget to use feather selection, and do this to both the new layers you've copied.

Part 5: Creating the scene

Start adding some of the background elements to create a scene and environment in which the astronaut is based...



1 Open Mars.tif and create a selection around the landscape, excluding the sky. Use the Pen tool to create the selection. Then once you've turned your clipping path into a selection, copy and paste the landscape as the top layer of the Mars2.psd document.



2 Name the new layer 'landscape' and use the Transform command to resize and scale it into position (see above). Set the blending mode to Screen and then use the Eraser tool to blend the bottom of the landscape into the background. Now duplicate this layer and rename the copied layer 'landscape 2'. Then use Gaussian Blur on this layer to soften up the overall landscape and give it a glowing feel. Use Gaussian Blur set to around 9.2 pixels.



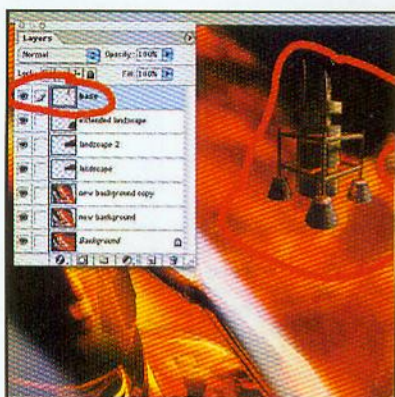
3 Use the Lasso tool to select part of the bottom of the landscape in the original landscape layer, then copy and paste it as the top layer in the Layers palette and rename it 'extended landscape'. Use the Eraser tool to soften its edges so it blends into the other landscape layers, and set the blending mode to Screen. Save the Mars2.psd document to your hard disk.

Blending in

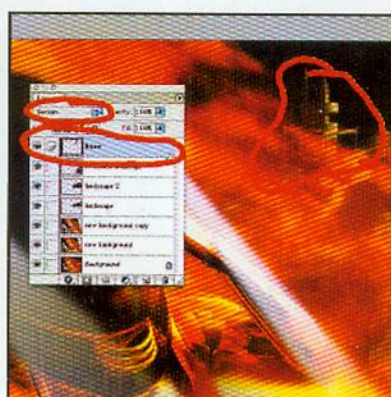
Blending Modes in the Layers palette is great for actually creating quick and sophisticated lighting effects on objects and layers. By experimenting with blending modes, you might find some alternative results.

Sci-fi

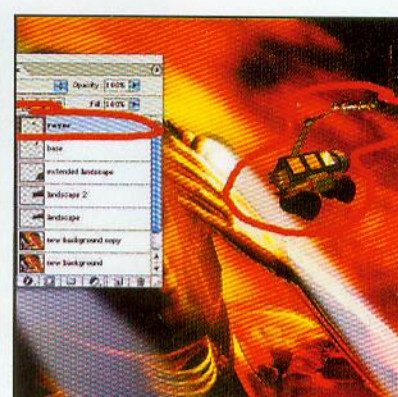
By looking at images on the Internet and previous sci-fi illustrations, we were able to come up with something that might be quite realistic for the future, in terms of the styling of the rover vehicle and the base/settlement. Keeping everything in a red and orange colour palette also helps with the realism.



4 Open base.tif and make a selection from the alpha channel with Select>Load Selection then copy and paste in the Mars2.psd document. Make sure it's pasted again as the top layer of the Layers palette, and rename the layer 'base'. Then use the Transform command to scale it down to the size shown above, and position it accordingly.



5 Use the Eraser tool to delete the bottom part of the base so it looks like it's behind the landscape. Then Gaussian Blur the base layer with a radius of 1.6 pixels and set the blending mode to Screen. You may want to add more 'base' layers to make it more like an established or quickly built settlement.



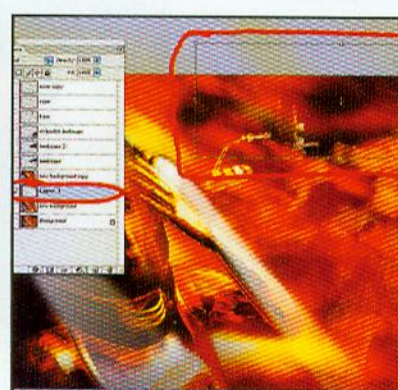
6 Open rover.tif and make a selection from the alpha channel with Select>Load Selection. Then copy and paste it into the mars2.psd document. Make sure it's pasted again as the top layer of the Layers palette and rename the layer 'rover'. Then use the Transform command to scale it down to the size shown above and position it accordingly.



7 Use the Eraser to delete the bottom part of the rover so it looks like it's behind the landscape. Then Gaussian Blur the base layer with a radius of 1.6 pixels and set the blending mode to Screen. You may want to add more base layers to make it more like an established or quickly built settlement. You could also duplicate the layer to make the rover stand out more.



8 The sky around the top right of the image is looking far too dark, so use the Lasso tool to make a selection of the sky above the astronaut's helmet and make the selection with a Feather Edge of 22 pixels. Use the new background layer, which isn't blurred, to copy from.



9 Once copied, just paste it as a layer above the new background layer in the Layers palette and use the Transform command again to stretch it to fit over the black area. Rename the layer 'extra sky'. Save the mars2.psd document to your disk.



10 Extend the black at the left top corner of the image and create a selection using either the Lasso or Pen tool and feather the selection by about 22 pixels. Then use the Gradient tool to make the black gradient. Call this layer 'extra black' and place it at the top of the Layers palette. Switch the blending mode to Hardlight.



11 Now add some highlights to the astronaut's shoulders. Select the Brush tool from the Tools palette and select a brush size of around 65 pixels to paint some small white areas as above. Do this on a new layer and call the layer 'highlights'.



12 Now use the Gaussian Blur filter to soften the highlights. A radius of around 39 pixels should be enough, but do experiment with different settings. Now save the mars2.psd document to your hard disk.

Creating the scene continued...



13 The helmet is still looking a bit too dark and flat, so open the original orangesky.jpg and take a selection from it and paste it over the helmet in the mars2.psd document. Rename this new layer 'clouds helmet'. See the above image for guidance.



14 Using the Eraser tool, delete the edges and blend the clouds into the helmet. Switch the blending mode for this layer to Hardlight. You may want to experiment and even try re-scaling the clouds for different effects.



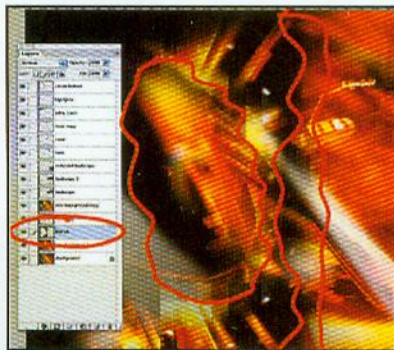
15 Soften up the eyelids a fraction as they're looking a bit sharp and harsh. Use the Blur tool on the palette and go to the original new background layer and use a brush size of around 39 per cent to rub around the eyelids. You may have to use the Zoom tool on the Tools palette to zoom into that area.

Part 6: Increasing vibrancy

Add additional imagery and textures to make the overall feel of the illustration a bit more vibrant around the astronaut's head and background...

Interpolation

Throughout this tutorial we've done quite a bit of scaling using the Transform function. This is not a problem when scaling down, but when scaling up, Photoshop has to interpolate the pixels and add more pixels to compensate for the size increase, which in turn results in softness or pixelation. With our illustration, this actually adds to the overall gritty feel. However, be careful when working on a live commission as that might not be appropriate for your brief.



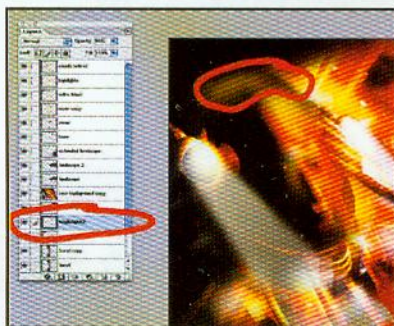
1 Open background1.jpg and copy and paste it into the mars2.psd document and rename it 'burst', then go to Edit>Transform>Flip Horizontal. Use the Eraser tool to delete the left edge of the layer image and the central parts. Also position it over the astronaut as shown above.



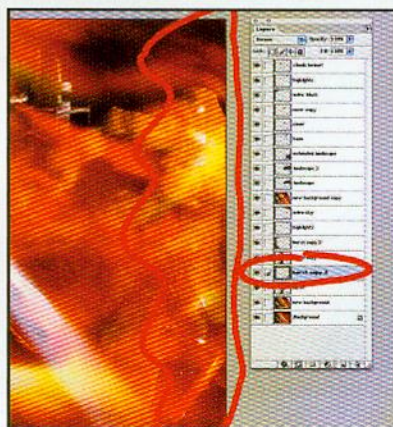
2 Switch the burst layer's blending mode to Screen. Then duplicate the layer and this should give the burst behind the astronaut's head a much more vibrant look. You may even want to scale and extend the burst to make it stand out even more.



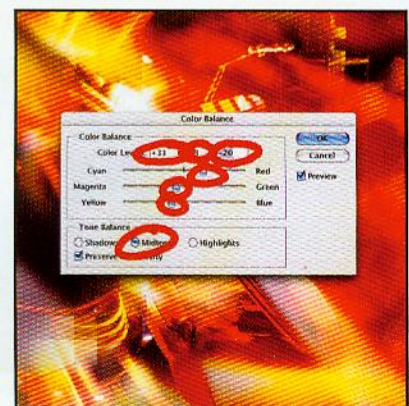
3 Duplicate the copied burst layer and Edit>Transform>Flip Horizontal to move the layer over to the left side of the image. Set the Opacity of this layer to about 54 per cent. See above for positioning.



4 Using the Eraser tool, delete around the top part of this layer as we've started to lose definition of the astronaut's helmet. Do it gradually. Then use the Paintbrush tool to paint a white highlight and soften it with the Gaussian Blur. Experiment until you find an effect you like. Do the white highlight on a new layer and call it 'highlight 2'. You may want to add some more colour, such as yellow, into this highlight.



5 Go back to the original burst layer and duplicate it. Drag it to the right side of the image, and flip it horizontally and position it like the above image.



6 At this point, flatten the image and resave it as mars3.psd. Then add some colour variation. Go to Image>Adjustments>Colour Balance. With mid-tones selected, set red to +31, magenta to -13 and yellow to -20. Click OK.

Part 7: Finalising the image

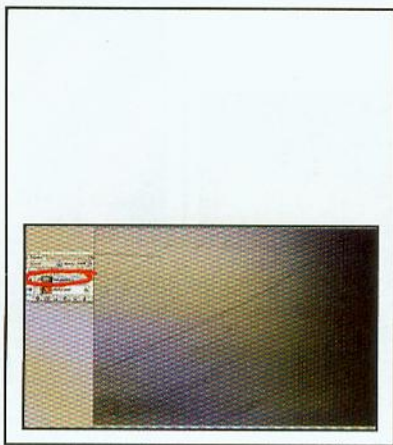
Add further layers of textures and manipulate them to give the image a grainy look...

Filthy job

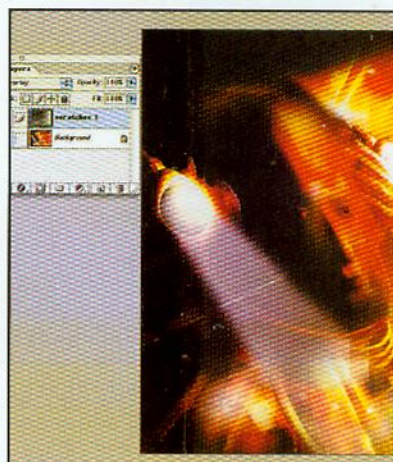
One of the quickest ways to get your image to look dirty is to use real scans of real objects, say the back of old postcards or photographs. Or try taking some pictures of textures and when you get the negatives back, scratch them up a bit or rub them on a stone floor. When they're scanned, you should get some nice effects.

Old scanners

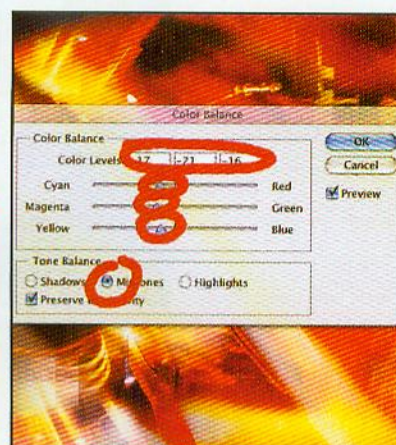
Never throw away old scanners. You can use them for scanning rough or sharp objects, without worrying about scratching the scanner's glass surface – this even adds to the effect. You may find that scanning in real objects gives you a much sharper and more detailed result than scanning in images.



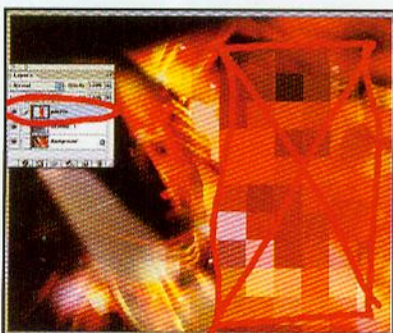
1 Open negative1.jpg from the cover CD. Go to Image>Mode>RGB. This will change the grayscale image into a colour file. Now copy and paste it into our mars3.psd document and call the new layer 'scratches 1'.



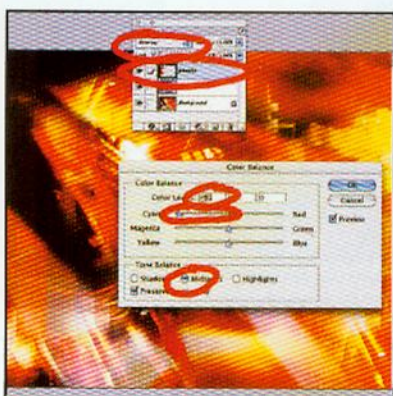
2 Go to Image>Adjustments>Invert, then set the blending mode for this layer to Overlay. You should now see the scratches starting to overlay and blend into the image more.



3 Set the colour balance on the 'scratches 1' layer to: cyan -17, magenta -21 and yellow -16. Use Image>Adjustments>Colour Balance as before for this procedure, making sure it's just applied to the mid-tones. Then click OK.



4 Here we'll add a bit of digital noise in the form of big pixels. Create a rectangular selection and copy part of the original background, then paste it as the top layer of the Layers palette. Go to Filter>Pixelate>Mosaic and set the size to around 108, a number that'll give us quite large block pixels. See the above image for the size of the selection. Rename this new layer 'pixels'.



5 Now move the pixels layer over to the left and set the blending mode to Overlay. Then open the Colour Balance dialog box and set the mid-tone of the cyan to around -91 – this helps kill the redness of the pixels and makes them a bit cooler.



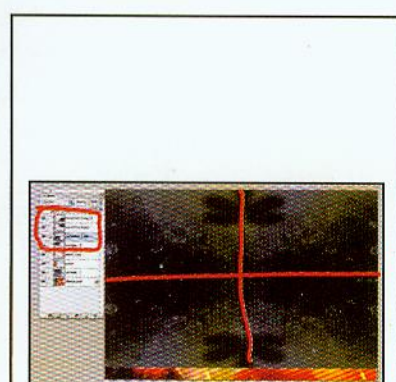
6 Make a duplicate of the pixels layer and move it to the right edge of the illustration. Set the blending mode to Screen and then make its Opacity about 49 per cent. This helps balance the illustration and gives the impression it could be a screen being viewed from somewhere else.



7 Now add more scratches. Open negative2.jpg, and, as with the previous negative, change its colour mode from gray to RGB. Copy and paste it into the mars3.psd document as the top layer file and rename it as 'scratches 2'. Position it in the top left of the image.



8 Duplicate the layer. Transform the duplicate layer horizontally and move it over to the right. Use the Zoom tool to zoom into the middle of the two scratches layers so you can fit them exactly next to each other.

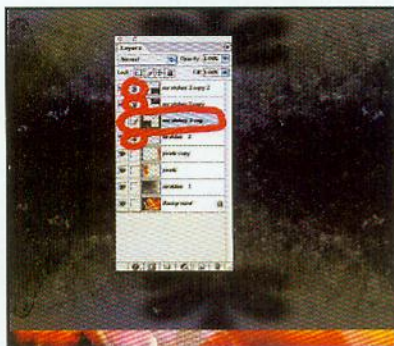


9 Now repeat this step twice more and position the two layers below them. Make sure they all look symmetrical. The image above will help you to see how we've positioned them.

Finalising the image continued...

Work in progress

Keep old versions of your illustration. Never ever throw away or delete files that your client might have said they didn't like, because they could always change their minds. Trust us, this will happen on a regular basis.



- 10** Use the Merge Layer feature to turn these duplicated layers into one layer – select the square next to the eye icon of each of the three duplicate layers. Once clicked, a chain/link icon should appear, which means that they're now all linked together. Go to Layer>Merge Link – this will combine them as one layer.



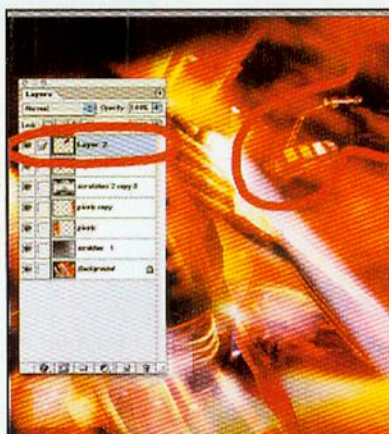
- 11** As before, make the layer fit the entire area by using the scale transform. Once you've done that, invert the layer. The above image shows how it should look.



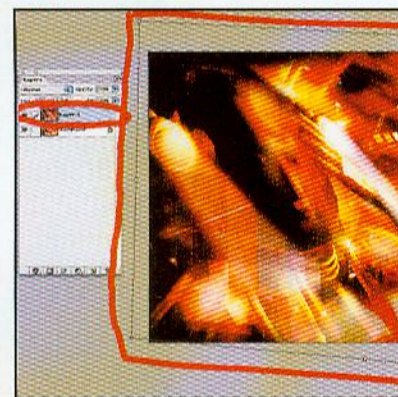
- 12** As with the previous negative we manipulated, set the blending mode to Overlay and the Opacity to 14 per cent. Then go to Image>Adjustment>Auto Levels. Using the Eraser, erase part of the layer that covers the rover, the base and the astronaut's face.



- 13** When working on a very complex layered illustration, you may find you're losing detailed elements, like the face and the rover. You can use the Lasso tool on the original background layer to make a Feather Lasso selection of the astronaut's face. Copy and paste it as the top layer. This brings even more definition back in. Set the opacity to about 80 per cent to retain some grain.



- 14** Now do the same to the rover by repeating the procedure, but then try experimenting with the Levels dialog box to make it a bit darker so that it stands out.



- 15** Flatten the image again and duplicate the background layer, using the Transform option with distort to make the image more dynamic. Sometimes just tweaking the illustration when its flattened can still give surprising results. Now save this as Mars4.psd.



- 16** Take some of the orange out of the image by using the Colour Balance, and bring a bit of blue back into the illustration. Set cyan to -56 and blue to +15.



- 17** Using the Type tool and Line tool, start to add some text and graphics – this will push the direction of the illustration further into the area of being a broadcast of some kind. For example, you could type in words like 'scanning' and 'broadcasting'. You could even draw bars and icons, and maybe a contour map to represent the landscape behind the astronaut. Do this in white as above.



- 18** Then make sure any graphics and words you've produced are merged as one layer. Duplicate the layer and Gaussian Blur it very slightly. Then switch the blending mode to Hardlight, and adjust the original data layer's Opacity to about 53 per cent. Experiment so that you get a glow to the text – you don't want anything too sharp. **cap**



Mars Mission – Pixel art

Pixel art is compact, neat and colourful. It's also very time-consuming to create and requires a great amount of dedication...

With its roots planted firmly in the pioneering days of videogames, pixel art has also become a valid illustration medium. Few modern art forms can claim the nostalgic appeal of pixel art, bringing back memories of late nights in front of Sega's MegaDrive or Nintendo's Super NES console for a whole generation of 20–30 somethings. Now relegated to the handheld and mobile phone sector, pixel art has taken a back seat over the last few years while its younger, quicker and easier (but a lot less attractive) brother, 3D, has taken centre stage in the videogames industry.

However, with the recent success of illustrators like eBoy going back to the old dark arts of the pixel and employing lessons learnt by videogame developers and isometric engineering draftsmen, pixel art is enjoying something of an underground renaissance. Its compact and vibrant dynamics are perfect for the busy colourful scenes it's used to create. It's amazing that a few simple squares can be pushed together to create such modern masterpieces.

Pixel illustration conforms to a strict set of laws and rules. It's often the case that when a completed image is viewed at 100 per cent, a stray or rogue pixel will stand out like a sore thumb; in fact, it's often said that where you don't place a pixel is sometimes even more important than where you do. In the tutorial that follows on page 38, I hope to pass on some of my pixel art knowledge, laying down the basic rules I employed when creating this illustration. (On page 34, we first introduce you to Gary Lucken and his work.) Pixel art is very addictive — practice and perseverance can often be the key — and if you conquer the steep learning curve, you find that your square-pushing skills increase quickly over a short space of time. ➤

 Expertise provided by Gary Lucken. Gary would like to thank Zoggles for the tutorial references. You can check out more extensive tutorials at [w] <http://zoggles.dyndns.org/zoggles.asp/tutorials.asp>. An excellent forum for information on pixel art can be found at [w] <http://pixelation.swoon.net>

Part 1: Setting up Photoshop for square-pushing

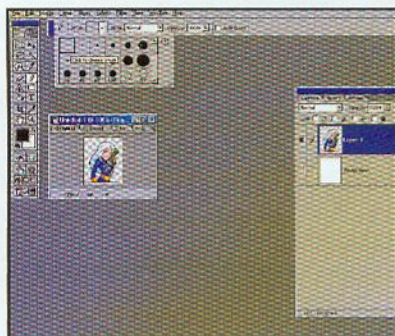
First up, take a moment to configure *ImageReady* (or *Photoshop*) for pixel art...

Easy to undo

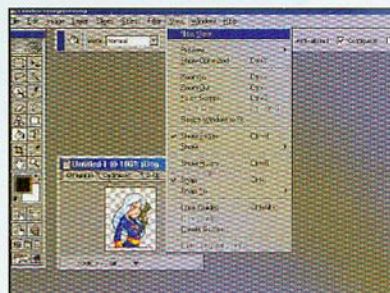
I tend to use Adobe *ImageReady* for all my pixel art. Having used *Photoshop* for years, I'm used to *ImageReady*'s tools and interface. Since *ImageReady* is basically *Photoshop* for low-res images, it's ideal for pixel art, plus it offers many more undos without the hassle of *Photoshop*'s History palette. Remember, all pixel art should be created at a screen resolution of 72dpi.

ImageReady alternatives

You're by no means restricted to *ImageReady*. *Paint Shop Pro*, *Graphics Gale* or even good old *MSPaint* are all capable pixel art applications, but only *Photoshop* and *PSP* offer layers, which help when creating large illustrations. If you're just starting out as a pixel artist, Microsoft's *MSPaint* will hold its own admirably.



1 Open *ImageReady* and create a new document. Select the Pencil tool (shortcut: N) and select the smallest brush size. This brush size represents 1 pixel – all images you see on your computer screen are made up of these single pixels. Get to love these tiny square pixels because you'll be seeing a lot of them.



2 When creating pixel art you'll be using a zoomed-in view most of the time. However, it's also helpful to be able to see what your image looks like at 100 per cent. To do this, select your new document and go to View>New View. This will create another view of your already open document. Place it to the side of the main document, and whatever you do now in the zoomed-in view will be shown in the 100 per cent view too.



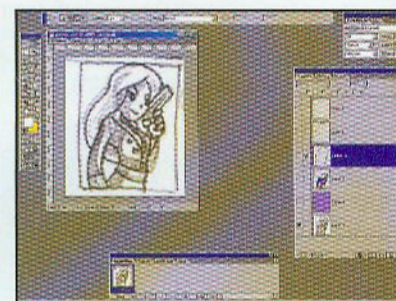
3 If you use any of *ImageReady*'s Marquee tools to draw shapes, make sure you turn off the anti-aliasing function. Anti-aliasing is a big no-no when doing pixel art, although hand anti-aliasing is used in certain styles of sprite work.



4 It's also helpful to create a palette of colours as you work. As you use a new colour, place a small square of this chosen hue in the top left-hand side of your document. This is an easy way to keep track of the colours you're using – a quick click of the Eyedropper tool and you'll be back working with your chosen colour.



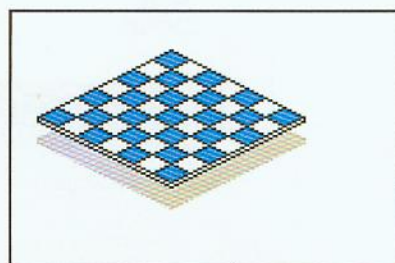
5 Zoom in on your pixel art, so that you can concentrate on the close-up details. Remember that you also have the 100 per cent view to one side, so you can always see if your art's looking how you want it to. If things don't look quite right, it might be because you're trying to use too many pixels and being overly detailed in too small an area. Pixel art is not like conventional art, because you're restricted to a limited number of squares with which to create your images. It's sometimes just as important where you don't place a pixel as where you do.



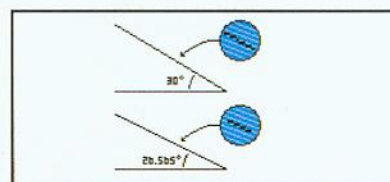
6 If you feel you need a guide to follow when creating your artwork, it's possible to pixel over scanned artwork. Scan in your art at 72dpi, trying to draw the original as close in size to the final piece. This way you'll lose less detail when reducing the image to a suitable pixel art size. Most videogame sprites are created in multiples of eight, so sizes of 8x8, 16x16, 32x32 and 64x64 are commonplace in pixel art. Of course, when producing a magazine illustration, you're put under no such restrictions.

Part 2: The mathematics and rules of isometric pixel art

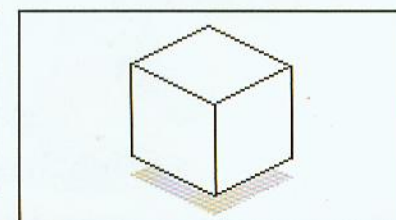
In this section we discuss the angles used in isometric pixel art and the various approaches to drawing simple shapes and colouring techniques...



1 Having its basis in engineering technical drawing, the isometric view represents objects from a perspective-less viewpoint. Objects are based on a diamond shaped grid as shown above.



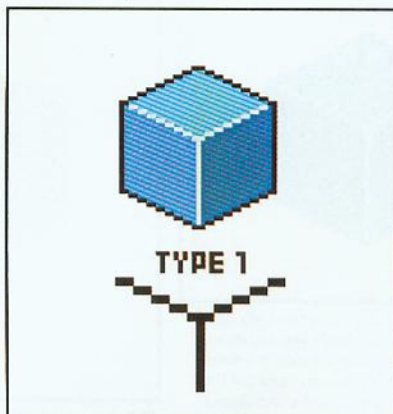
2 A traditional isometric view is based on an angle of 30 degrees. However, 30 degrees gives a messy and uneven line when displayed on a computer screen. Pixel art uses an angle of roughly 25.565 degrees. Don't worry about the sudden appearance of mathematics, because you don't really need to concern yourself with all these numbers.



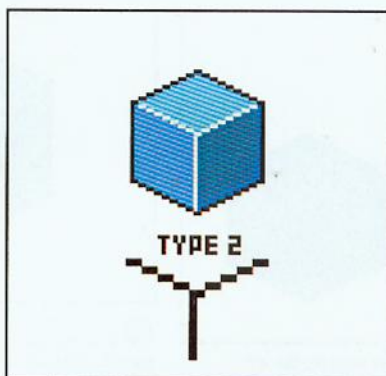
3 When drawing a line at 25.565 degrees, all you need to remember is '1 up, 2 across' – this creates a step-like effect when zoomed in. The lines above were created by placing two pixels then moving one pixel up and placing another two at the end of the previous ones.

You decide

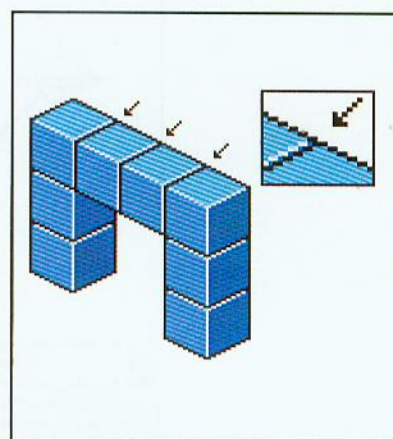
There are two different approaches to creating a basic square object in isometric pixel art, and each has its plus and minus points. Once you've worked with pixels for a while, it'll become second nature to choose between these two methods.



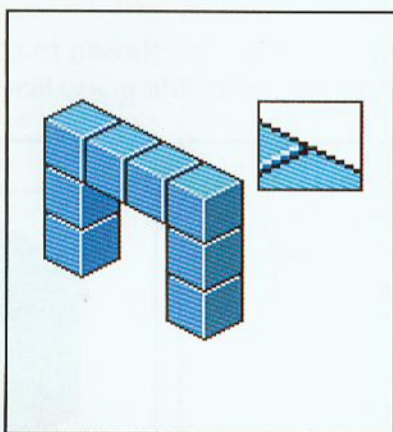
4 There are two ways to approach isometric graphics. First, there's the three-pixel corner (as shown here). This method uses three pixels in the forward corners and creates a slightly neater box than the second method.



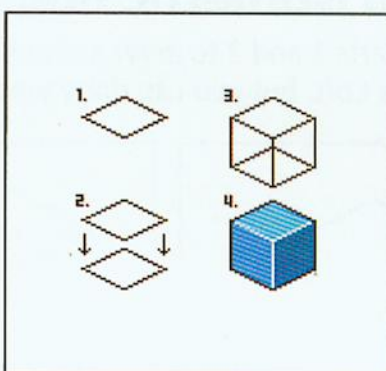
5 The second method doesn't use three pixels in each forward corner. Instead, it uses the 1 up, 2 across method in the entire construction. This method gives a slightly less appealing shape and doesn't lend itself to highlighted edges as well as the first method. However, it does have its own advantages.



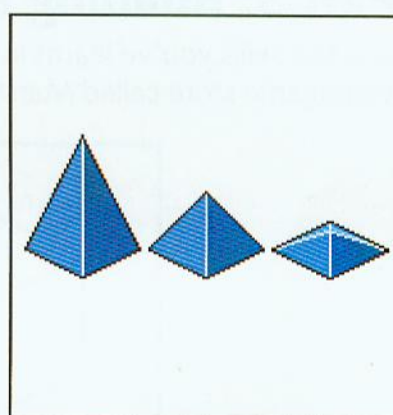
6 If you wish to tile two three-pixel corner boxes to make a larger image, you'll get ugly jagged edges. Jaggies are often talked about in pixel art when referring to an ugly step to the pixelated line.



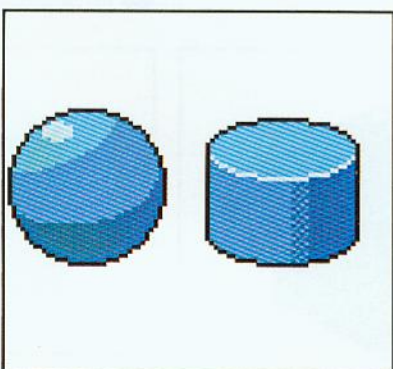
7 Therefore, the method described in Step 5 is recommended if you wish to place boxes next to each other. This second method makes a much neater line (without jaggies) when tiling boxes.



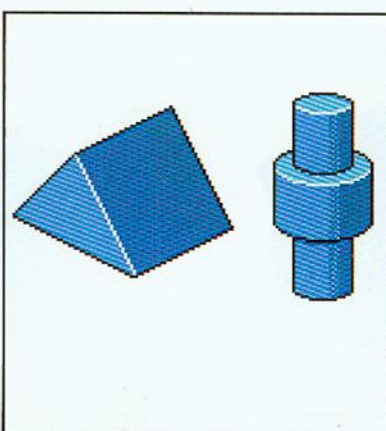
8 Boxes are easily created using the methods we've discussed, but you can build them in other ways too. The easiest way to draw a box is to create the upper face then duplicate the layer in *Photoshop* by choosing Duplicate Layers in the Layers palette. Move the new layer downwards then join up the edges using vertical lines.



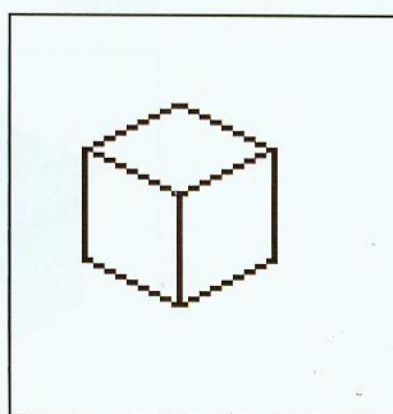
9 Here are some examples of triangles. Notice how one of them uses the 1 up, 2 across method in its entirety. The others use both this and lines of single pixels, which gives less steep a slope to the triangles' sides.



10 Circles are probably the trickiest shape to tackle from an ISO viewpoint. A front-on ball shape is easily created using the Marquee tool, but an upright tube shape is a lot harder. With a little patience and a keen eye, this can also be created using the Marquee tool.

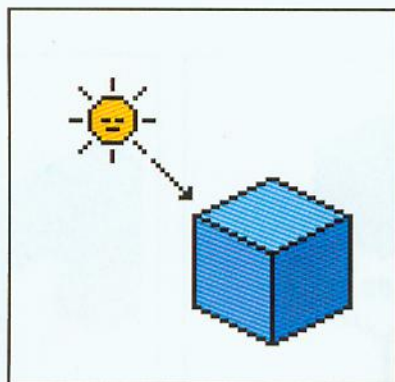


11 Here are a few other basic shapes that can be easily created using an isometric viewpoint. You are restricted only by your imagination.

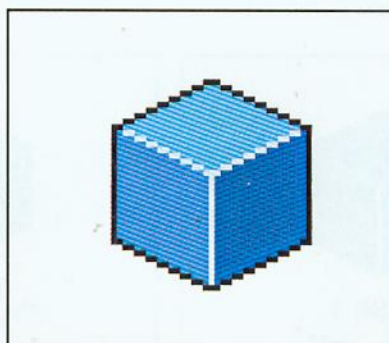


12 A lot of comic-style pixel art uses black outlines. Let's create a light-sourced cube as described above. We start with a cube created using a solid black outline.

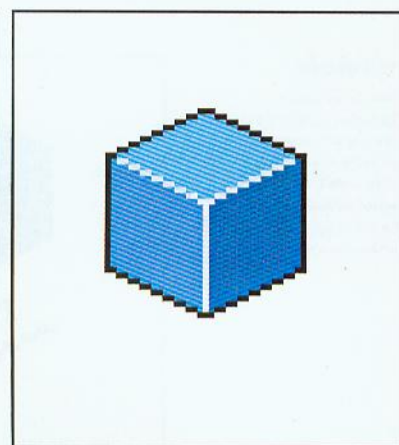
The mathematics and rules of isometric pixel art continued...



13 Choose a light source from the top left pointing downwards onto the cube. Then paint the left-hand face blue. Choose a lighter blue for the top, where the light is strongest, and a darker blue for the right-hand face, which receives the least amount of light.



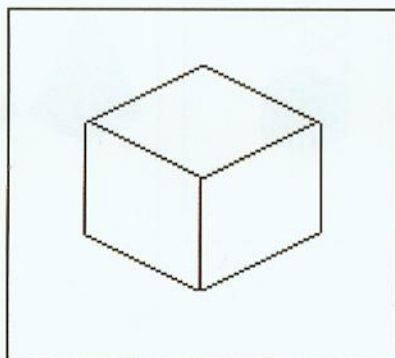
14 The cube is now looking more like a 3D cube, but there are still a few things you can do to make it look even cooler. Because you don't need a black outline on every edge, you can highlight the forward edges (those contained within the shape) to give a very nice effect. Choose a shade even lighter than the top face, and colour the lines that make the inside edges of the cube.



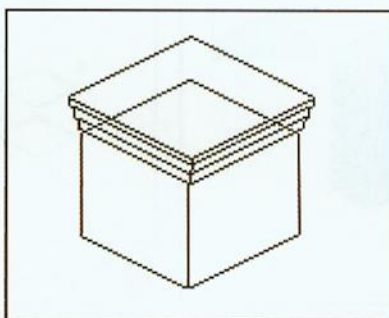
15 As a nice finishing touch, choose a pure white colour and put a few pixels on the front-facing corner – this gives a shiny effect to the shape.

Part 3: Building an isometric house

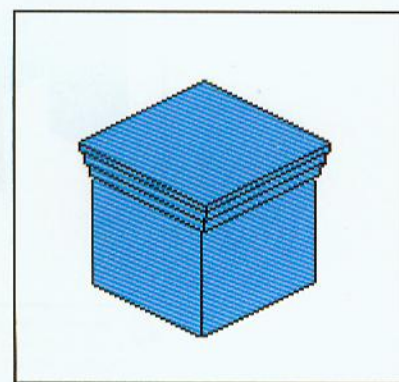
Use the skills you've learnt in Parts 1 and 2 to draw an isometric building. I've chosen to create a videogame store called Marsh's Loft, but you can draw whatever kind of building you like...



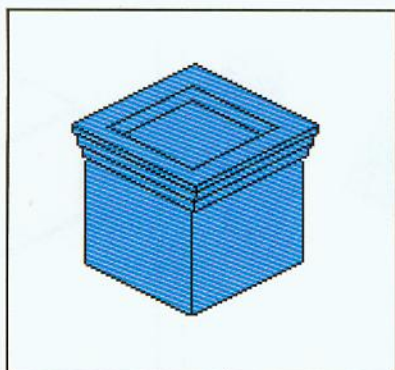
1 Start by drawing a basic box outline. Doing this will help you to get the correct scale for your building.



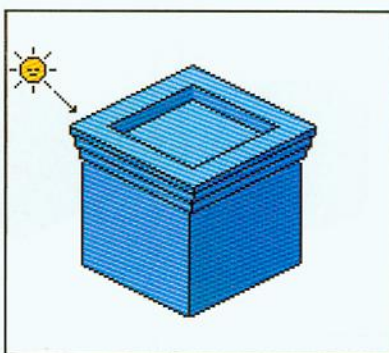
2 Because a basic cube shape would make a very boring looking construction I've added a more interesting top section. This roof section is made from three thin square chunks laid out on top of each other and then joined at the edges.



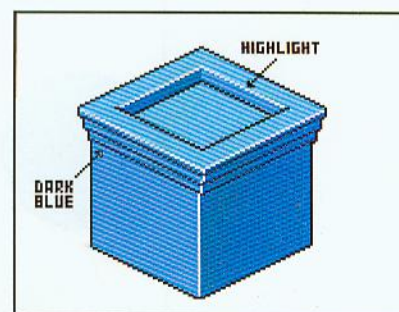
3 Now you've got the basic shape of a house, you can fill the image with your chosen colour.



4 To make things even more interesting, you could add an indentation to the top of the building. This creates a roof terrace and is a nice simple touch.



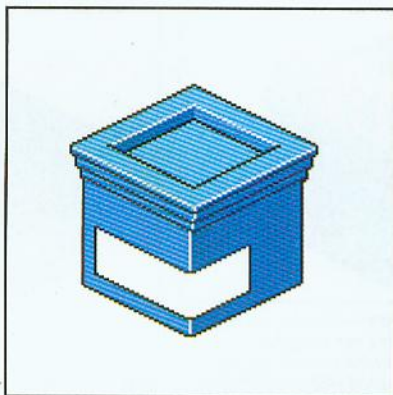
5 Using the top-left light source we outlined earlier, choose three variations of your colour: a base colour, a lighter colour and a darker colour. Using these three hues, you can fill each side depending on how the light hits the building.



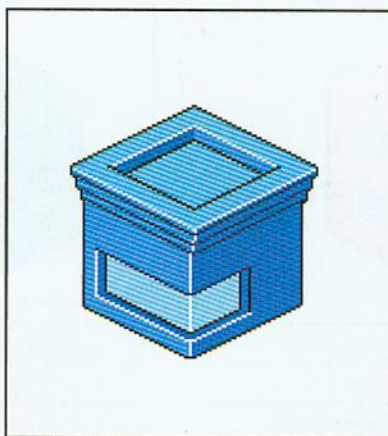
6 Now add some highlights to the edges. Highlighting the inner edges of the building gives a cool effect. The black edges can be very overpowering, but adding these highlights really helps to round off the building. Notice also that I've replaced some of the black edges with a darker shade of blue.

Pixel type

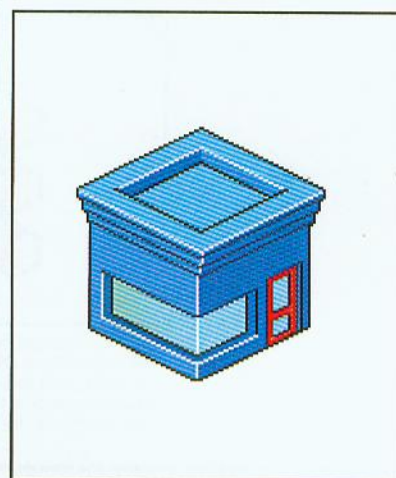
The shop is called Marsh's Loft, but people won't know this unless there's a sign. In this section, we'll take a slight diversion before our building is finished to explain how to create an isometric sign.



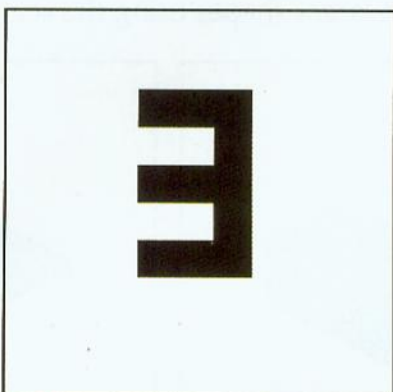
7 Give your building a window so the customers can see in. For this you can use a method called sculpting. Draw a rectangle where you want the window to sit and then make a selection inside this shape using the Marquee tool. Then delete the selection.



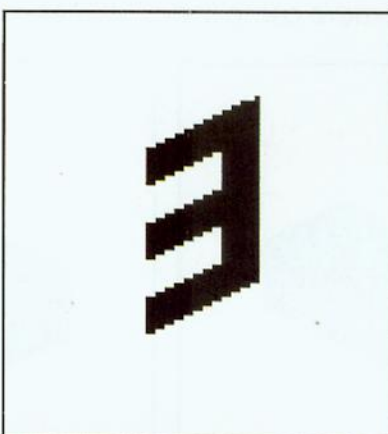
8 Now draw a smaller rectangle inside the deleted selection – this gives you a nice window ledge. Fill the shape with a suitable window colour. You can also add a few highlights here if you like.



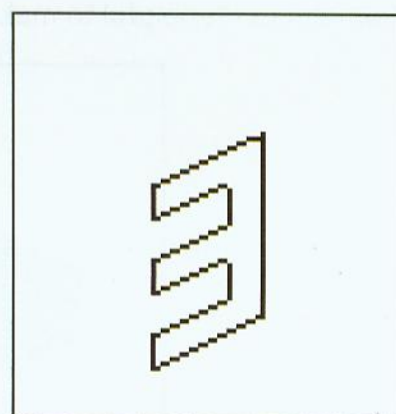
9 Use a similar technique to create a door next to the window.



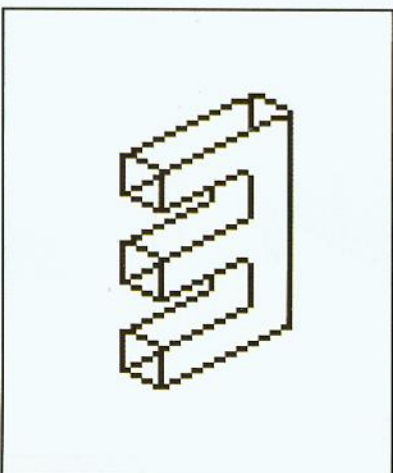
10 Choose a typeface and type a character – I've chosen a '3'. Make sure the anti-alias option is turned off. There are many free bitmap typefaces available for download on the Internet, and getting a small library of bitmap fonts really helps when using type in pixel art.



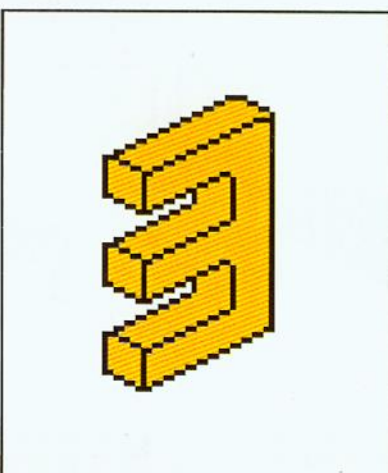
11 From the *Photoshop* menu bar select Edit>Free Transform>Skew and skew your character to an isometric angle. You can do this by eye or by using the 25.565 degree angle.



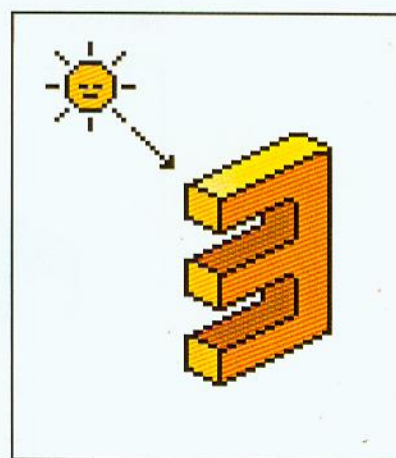
12 Now use the Marquee tool to select the character, then on a new layer choose Edit>Stroke and make sure the size is set to one pixel and the location is set to centre. This will give you an outline of your character.



13 Now duplicate the layer and move it back to create the two sides of your isometric character. Join up each edge using the 2 up, 1 across method.

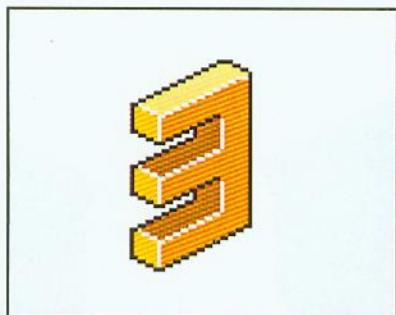


14 Now colour-fill each side and clean up any pixels that shouldn't show through your isometric character.



15 Once again using the top-left light source, choose a darker and lighter shade of your original colour and fill the corresponding sides using these colours.

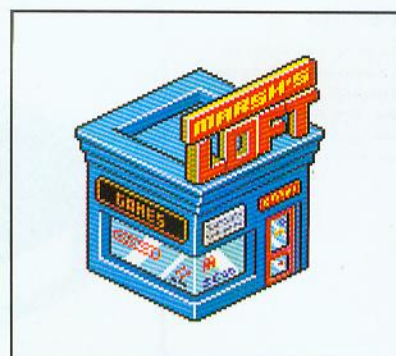
Building an isometric house continued...



16 Now highlight the edges using an even lighter shade of your chosen colour and add some pure white pixels to each edge. As we discussed in the previous section, this is by no means necessary, but it does give a nice shiny edge effect.



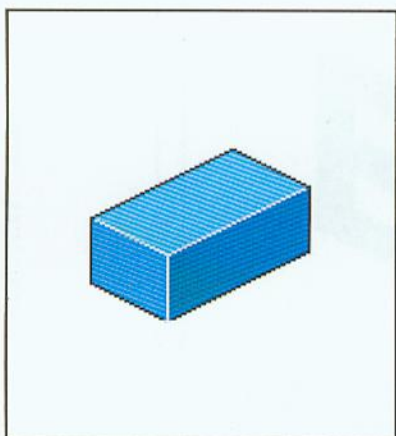
17 Now you've learned how to make isometric type, you can create a sign using this technique. I've created my Marsh's Loft sign and put it on top of the right-hand edge of my building. Follow steps 10-16 to create all the letters needed for your own shop sign.



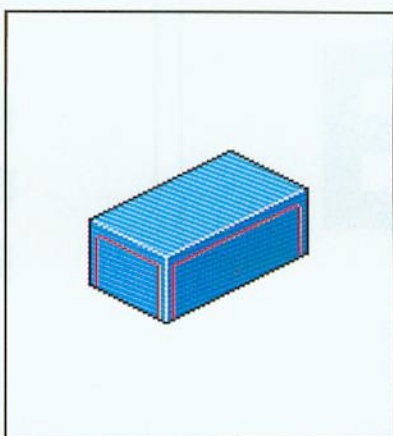
18 As a few finishing touches, you could add some highlights to the glass, and some stickers and signs above the door and on the windows.

Part 4: The sculpting method

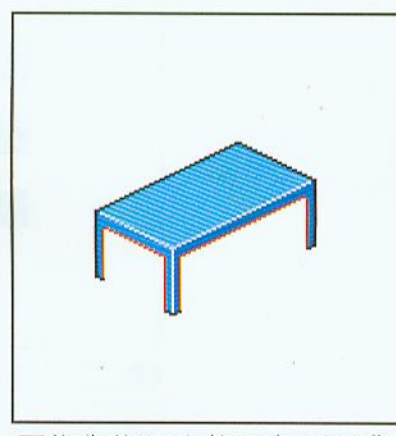
Sometimes it's helpful to make more complicated shapes from larger shapes using the sculpting method...



1 Let's make a table using the sculpting method. Draw yourself a large rectangular box, colour-fill each side as discussed previously and give your box a highlight on the forward-facing edges.



2 Using a contrasting colour (I've chosen red), mark out the legs of your table. Don't worry about the legs looking flat because we'll add the 3D aspect later on.



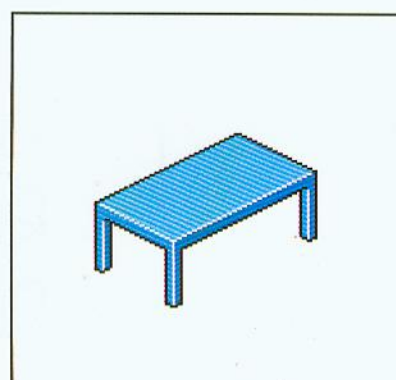
3 Use the Marquee tool (remember to turn off any feathering or anti-aliasing) to make a selection of the inside of the shapes you made with the contrasting colour. Then hit Delete to remove them.



4 As mentioned before, the table looks a little flat, so you need to add the other sides of the left and right-hand legs. Fill in the extra pixel using a black outline – this helps when highlighting the table edges.



5 Now fill in the legs with the correct shade. The forward-facing side of the left-hand leg should be filled with the darkest hue, while the other side is filled with the middle of our three chosen colours. Go over the remaining outline covering the red in black, but leave the highlights on the legs.



6 The table is now almost finished. You've outlined it in black and colour-filled any non-coloured sections. The only thing left to do is to highlight the legs with your highlight colours.

Part 5: Pixeling the alien

This section explains how to create one of the alien characters in the finished Space Station image...

Details

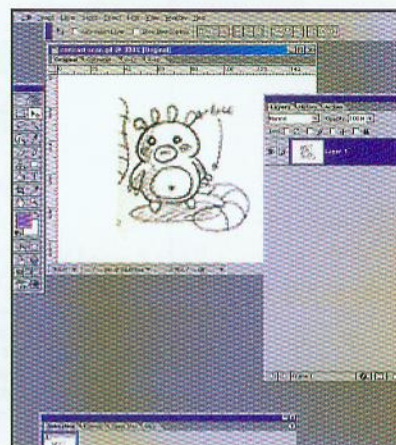
You can create a pixel sprite of any kind of character you like, but it's a good idea to scan in a few sketches and see which one retains most detail when scaled down in size. Also remember that because we're dealing with a limited number of pixels, the most detailed original art might be very hard to pixel over.



1 After doing a quick pencil sketch as close to the original size as possible, scan the image in at a screen resolution of 72dpi. All pixel art is done at this resolution. If your image is still too big, scale it down in *Photoshop*.



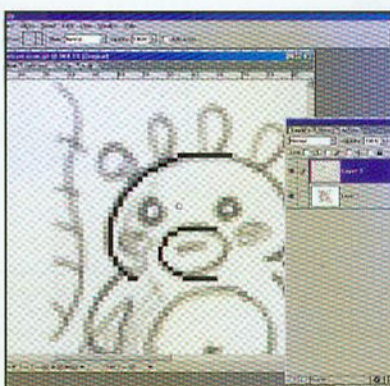
2 Increase the contrast of the scan to make the outline easier to follow. To do this, choose *Image>Adjust>Brightness-Contrast* and increase the contrast using the slider until you can make out the lines of your scan more easily.



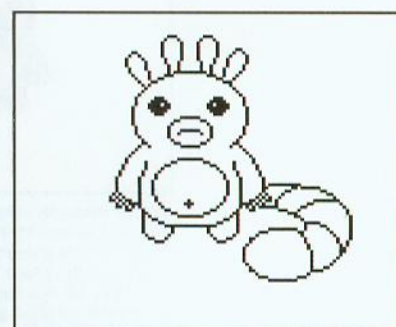
3 The easiest way to pixel over your sketch is to use layers. In *Photoshop*'s Layers palette, add a new layer by clicking on the drop-down menu and choosing *New Layer*.



4 If your original scan is very dark, it's sometimes hard to follow, especially if you're pixeling over the top using a similar dark colour. I find it helpful to knock back the opacity to 50 per cent – this way you can still see the original image and easily drop pixels over the top of the image.



5 Now you can start to outline over the original scan. Follow your artwork pixel by pixel. Don't worry about making it a perfect reproduction of your original, because you can always go back and clean up parts later.



6 Using the scan, you now produce a line art version of your character by following the lines pixel by pixel. Alternatively, use your scan as a base and re-create it using a combination of the *Pen* tool and the *Marquee* tool. The second method can sometimes help to create a more symmetrical cartoon-like image and is what I've used to create this character.



7 You can now start to colour the sprite. Using the *Fill* tool, choose your colours and fill each section of the character. Remember to create a palette next to your image as explained in Step 5 of Part 1 of this tutorial.



8 Using a darker hue of each of your chosen colours, you can now start to shade the character. Think about how the light would hit your sprite were it a rounded 3D object, and shade it accordingly.



9 Once you've shaded the dark shadows, add a few highlights. Choose a lighter colour of the middle hue and pick out the section where the light hits. The most obvious place is the top of the head. You can see in the image above how I've highlighted the light hitting this area.

Pixeling the alien continued...



10 Since the black outline is quite oppressive, it's a good idea to eliminate all the black from inside the main outline. Choose an even darker shade than the shadow hue and go over the black outline that falls inside the main outline.



11 You can also use this method on the outside main outline. But this time, bear in mind where the light hits. Go over the black with a slightly darker shade of your main colour then choose an even darker hue for where the shadows hit. This method is sometimes called SELOUT (selective outlining) and is used to even greater extent in many commercial game sprites.



12 Adding even more highlights can be very effective. Choosing a pure white colour, pick out one or two pixel highlights where you feel light will affect the character most.



13 Another colouring technique used in sprites that are restricted in colour choice is 'dithering'. I've gone really over the top with the dithering in this image, but it helps to explain the technique. Taking a slightly darker hue and creating a checkerboard effect gives the impression of three colours being used when there are actually only two. This is especially effective in greyscale sprites.



14 Give your character a simple shadow using the Marquee tool. Just make a selection on a layer underneath your character and fill in a darker colour than the background it'll be standing on.



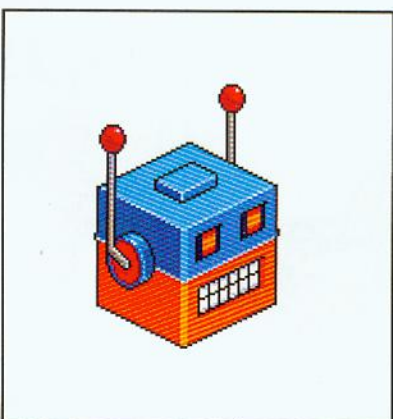
15 The character is now essentially finished. However, depending on what kind of background it's going to be placed on, a black outline can be quite effective. Make a selection with the Marquee tool, and choose Edit>Stroke. Make sure the width is set to one and the location is set to centre – this gives you a black outline.

Part 6: Adding texture

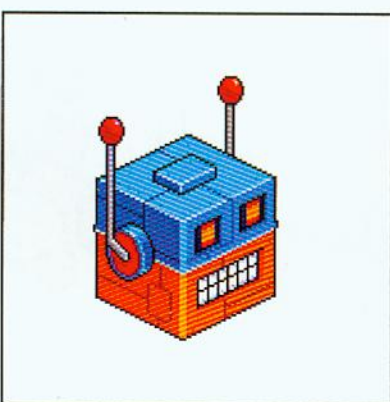
Spice things up a bit by adding textures to your image...

Bevel technique

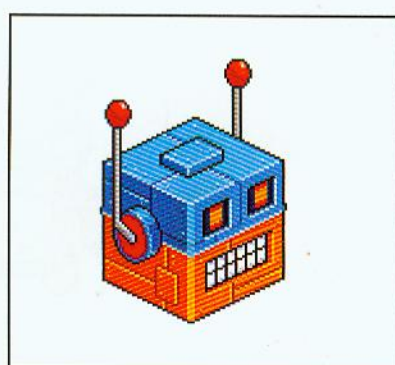
A problem that a lot of first-time pixel artists experience is the bevelled edge effect. When drawing a character sprite, highlighting around the edge can sometimes make your sprite look flat shaded and not like a true three-dimensional object. However, the bevel technique explained here can be used to overcome the problem.



1 When I first pixelated the robot in my illustration, I thought he looked a bit bland. Something seemed to be lacking – the flat colours just didn't give him that metal-man feel I was after.



2 I took a darker colour and started to pixel square panels around the robot's head. I also dotted a few rivets and bolts here and there. This in itself gives the robots a more metallic look, like he's bolted together from sheets of coloured metal.



3 It's still lacking something. To beef it up, take a highlight colour and pixel another line inside the darker pixels we laid before. Make sure you follow the same lines all over the robot. This really helps to make the panels look more bevelled, and some highlights around the rivets and bolts give a really cool effect. **CA-P**



Mars Mission – Illustrator

Jon Burgerman uses basic illustration skills to create a composition that centres on the fear and panic the astronauts might feel after landing on Mars...

My illustration doesn't have a name, but it's been created for the First Men on Mars commission. Men, it seems, have a tireless desire to explore. I think travelling to Mars may prove to be one giant step too far. We can all marvel at the technological wizardry used to catapult three men in Michelin suits and goldfish bowl helmets a very long way away, but what the hell are they going to do once they get there? There are no pubs, no sports, no TVs; even the opportunity for laser-beam space battles against evil aliens seems remote.

I think these men would swiftly degenerate from heroic egotism to cowardly fear within moments of landing, and this is the narrative of my illustration.

The planet is sparse, the light is growing dim and everything is very far away from the men. A mixture of fear, humour and concern plague me when I set about working on a new piece, and these emotions have weaselled their way into the characters.

I don't work in an overly complicated way. My illustration was put together in a relatively straightforward manner using basic skills in *Photoshop* and *Illustrator*. The emphasis of my focus is on getting the composition right from the start, and then allowing the other elements to be slotted into place. Keeping the original felt tip and biro lines of the drawings, and contrasting them against smooth rounded vector shapes also became an integral feature of the piece. At the least, I hope to have created an engaging illustration with a semblance of personality, which will complement the article it's accompanying.

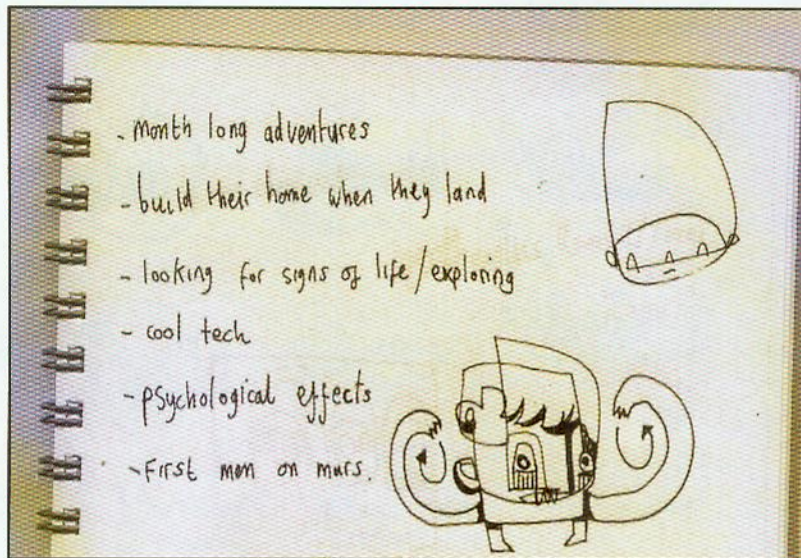
(Turn the page to find out more about Jon Burgerman and his work, or skip straight to his Mars Mission tutorial, which starts on page 54.)



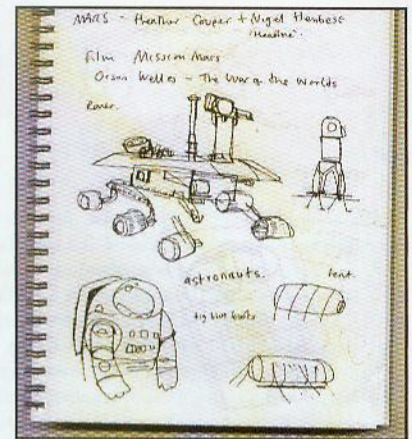
Expertise provided by Jon Burgerman. You can see more of Jon's work at www.jonburgerman.com and contact him at jeffries@jonburgerman.com

Part 1: Coming up with ideas

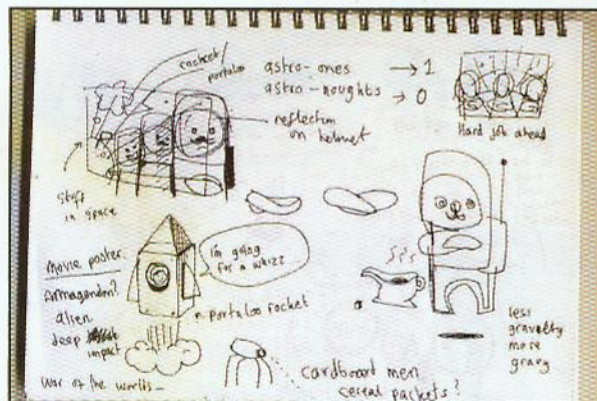
Make sure you understand the brief, and then do your research...



1 Before putting pen to paper, carefully read the brief, re-read it and then read it again. Underline relevant points and highlight information that lends itself to interesting imagery. Build up a list of points and words that you think may be good to illustrate. There's no need to be too picky this early in the proceedings, because you never know where one idea might lead you.



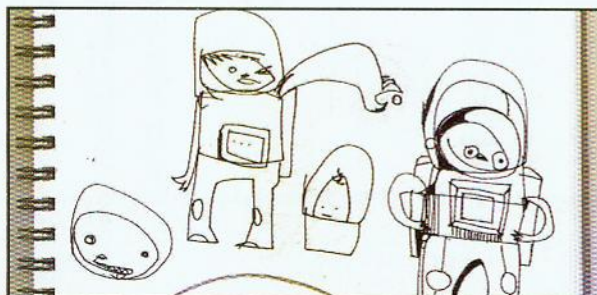
2 The points I find most interesting about the project are the obvious cool equipment that astronauts have to play around with, the whole idea of men on Mars - like something out of a film - and the speculation about psychological effects. The brief mentioned that the astronauts would be travelling together in something more akin to a portaloos than a spaceship. I can't help thinking that the effects of spending a year in the toilet with other men en route to Mars could be quite extreme.



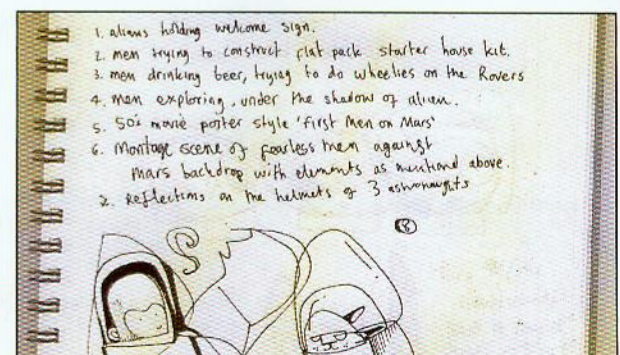
3 By now I'm itching to get my pens out, so I sit down and muck about a bit to see what comes out. The first thing I normally have to do is get all of the bad jokes and silly puns out of my system.



4 To get an idea of what sort of equipment the astronauts might use, I do some searches through Google. I find a few space exploration sites, but most of them are dull and contain few interesting images. It's as if the only people really interested in space travel are scientists, mathematicians and Star Trek nerds.



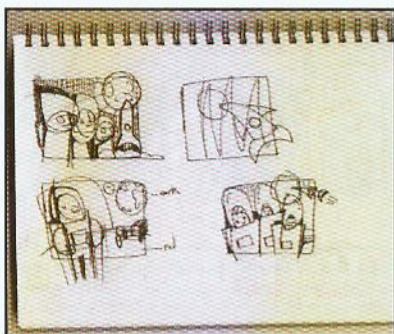
5 The library is equally unimpressive with its selection of space books, so I head into town to look in a major book store. Conveniently placed next to the popular science section is a large table and some comfy chairs, an area that happily accommodates me as I scribble away all afternoon. I note down the names and publishers of all the books I look at, just in case I need to refer back to them another time.



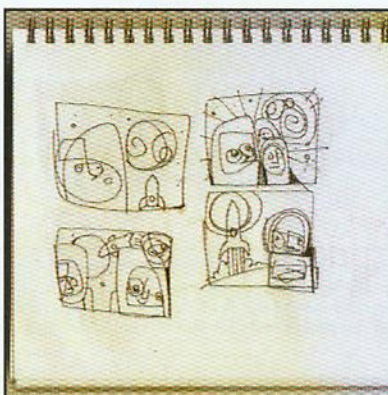
6 I draft a list of seven or eight rosey ideas based upon the images and ideas formed from the brief. It's now time to work out which elements will go into my illustration to make up the final composition.

Part 2: Working out the composition

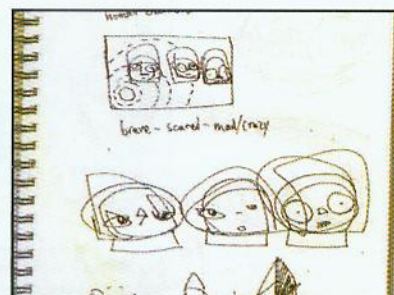
Use basic shapes to compose your doodles in *Illustrator*...



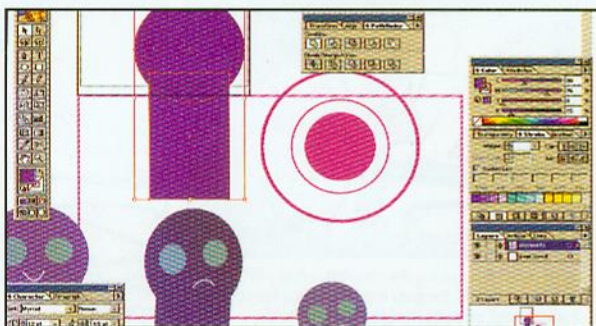
1 In every image there are hero elements and secondary (side-kick) elements. For my early compositions, I only need to think about the hero elements, which are the main features of the image. For these, I decide to use three astronauts – big, strong and bold. Secondary elements include a planet in the background, space equipment and other such extras.



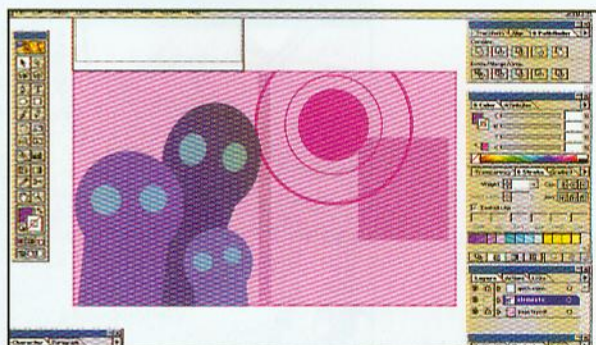
2 In a less than careful manner, I scribble down some boxes and draw in some of my compositional elements. Although the images are crude, it begins to suggest how the relationship between the objects may or may not work.



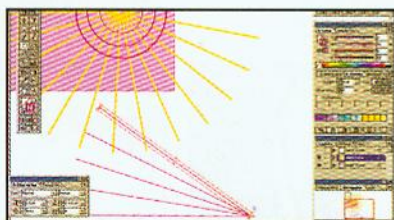
3 While composing the image, I also have to think about how I want the image to feel – the atmosphere it'll create. I want the illustration to be fun, but also touch upon the human side of the mission. It's important to remember what the illustration is for and not get too carried away with trying to create my own narrative. Referring back to the brief once again, it says that the article is for a broadsheet weekend magazine supplement, so I need to keep the target audience in mind.



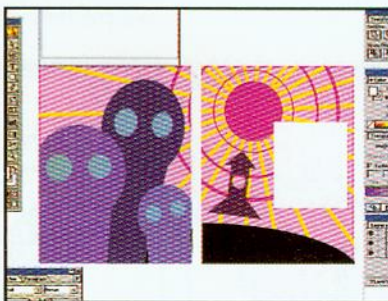
4 Once I've got a set of doodled compositions, it's time to re-create them more accurately on the computer. There's always a sense of the unknown about working like this. I try to keep as many options open as possible before nailing down one design. To save on time and effort (two things that should always be kept to the absolute minimum) I recreate the compositions using very basic shapes in *Illustrator*. The elements are made using the simple Shapes tools, joining them together using Combine in the Pathfinder window.



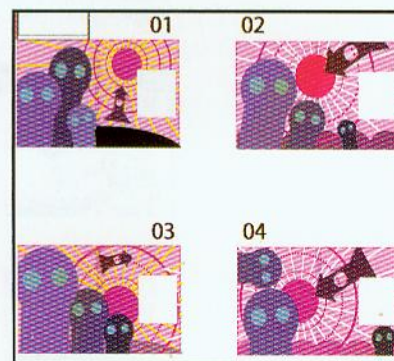
5 The page size of the illustration, including bleeds and gutters, is created along with the panel for the copy. This gives me an accurate idea of how these elements might fit together. If nothing seems to work then at least I haven't spent too much time creating the artwork. I can also tweak to allow for gutters/bleeds/text boxes from an early stage, hopefully preventing any problems later on in the piece.



6 I use step and repeat to create the multiple lines for the rays coming out of the planet. To do this, draw a line and, with it highlighted, select the Rotate tool and click on the end of the line you wish to rotate. While holding down Ctrl+Alt, rotate the line to its next position. Tap away on Ctrl+D to step and repeat the rotation. By holding down Shift while rotating, it'll keep the line to 45-degree movements. Playing around with step and repeat is a good way to generate quick backdrops and effects for an illustration. Hitting deadlines is important if you ever want to be re-commissioned by the client, so being able to create things like backdrops quickly is a great help. If you have more time later on, you can always go back and re-work elements. The best thing to do is to learn as many keyboard shortcuts as your brain will allow; they're a real time saver.

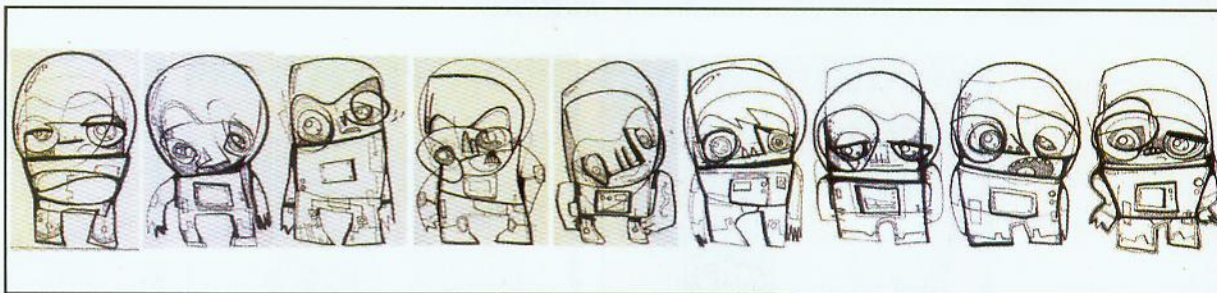


7 By tweaking and adding more to the compositions, the piece slowly begins to take shape. The rocket element has been added to flesh out the design a little and to distract me from the phallic purple ghosts representing the astronauts. I try to take into account how the illustration will be seen in the magazine. As the reader turns the page, the first thing they'll see is the rocket and planet, which on its own would be a sufficient composition. Then as the reader spreads out the magazine to see both pages, the picture is complete, and they'll see the more human side of the proceedings: the astronauts huddled up in the corner.



8 I mock up some compositions while taking the gutter width and text box into account. Composition 01 has the planet just off the top left-hand corner of the text box – as if the rectangle is gleaming – with the rocket pointing up to it. The figures are grouped to one side, slightly fearful. The other compositions are variations on the theme. Composition 04 has an element of *Scooby Doo* about it. I'm quite sceptical about it working, but I'd like it to.

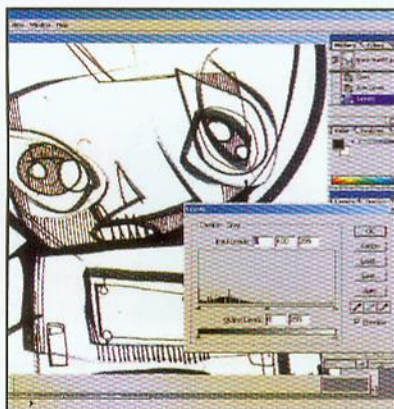
Working out the composition continued...



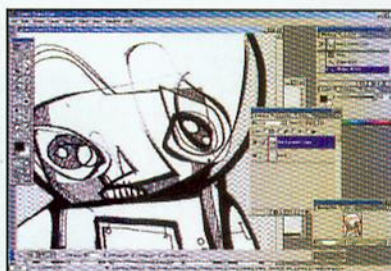
9 It's back to the sketchbook to draw a series of astronauts to place into the composition. I'm interested in getting the right shapes for the men, and putting some interesting lines and features in the drawings. I use three pens of different thickness to create contrast within the drawings and to help emphasise certain elements. The expressions on the astronauts' faces vary between brave to scared to mad, which is the gamut of emotions I think the men would experience. By drawing more astronauts than are actually needed, I'm able to exercise a certain level of quality control. It's better to have too many options than too few.

Part 3: Importing drawings

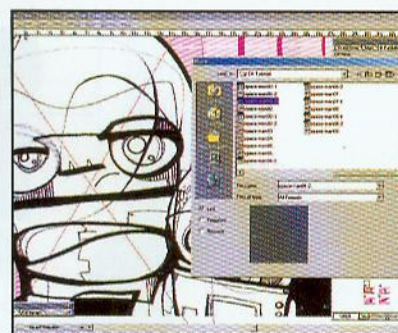
Scan your drawings into *Photoshop* then import them to *Illustrator* to see how the composition shapes up...



1 Having drawn a series of spacemen, I scan them into *Photoshop* as greyscale. I need to clean them up a little by sharpening and deepening their black colour. This is easily done by playing around with the image levels found in Image>Adjust>Levels or by pressing Ctrl+L.



2 After maximising the contrast, while still trying to maintain the finer lines, I create a transparent background, so that when the astronauts are imported into *Illustrator* they won't have a white block around them. To do this, simply duplicate the image layer and create a new blank layer underneath that. Now remove the original 'background' layer and delete the white areas you don't require on the 'background copy' layer. Now save as a PSD. By using the Eraser tool with a low opacity setting, it's possible to create transparency effects, which will be carried over into *Illustrator*. This is a useful tip when integrating bitmaps into vector-based images.



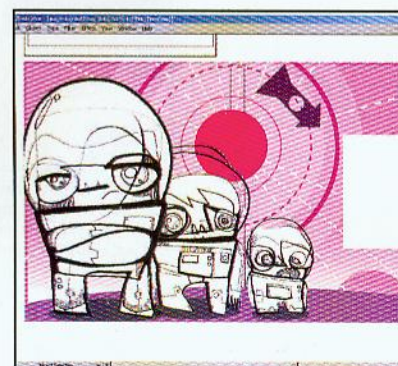
3 Dropping the images into *Illustrator* shows how they look in the composition and whether the style suits the piece. Go to File>Place and then import the image, making sure that the link box is ticked. This saves time; the images only need to be embedded when the illustration is finished and ready to print. Remember, though, that the linked images are relative to where the *Illustrator* file is saved – if you move them into a different folder, you'll have to re-link them.



4 This immediately alters the look of the images, making it easier to see which compositions are going to work. Having dropped in my astronaut drawings, I'm leaning towards a composition between numbers 02 and 03. I like the positioning of the men in 03 but prefer the planet/rocket background in 02. As expected, the *Scooby Doo* composition (04) looks stupid.



5 It's time to decide whether the piece will be in a vector or bitmap format. I'm keen to retain a hand-drawn quality, but concede it's often easier to work with vectors, especially if your computer isn't top of the range (like my hunk of plastic junk). Vectors allow for quick manipulation of size and colours although they'll also change the look and feel of the piece. By turning my astronaut into plotted points, the finer details of the drawing have been lost – the intricacies have been smoothed out and the drawing looks a lot less raw.



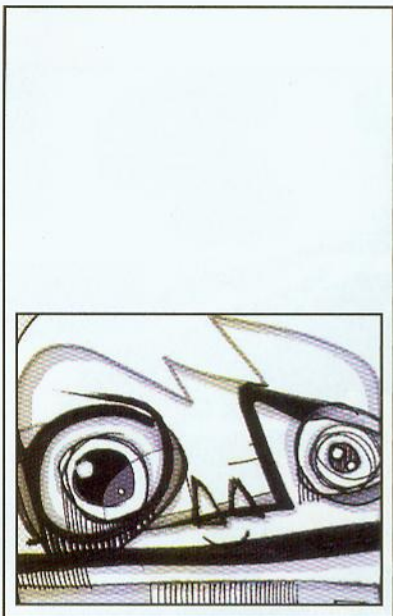
6 I re-jig the composition to somewhere between 02 and 03. I also take away some of the lines beaming out from the central planet, adding a couple of background planets and giving the sky a gradient from white to pink. I wonder whether to leave the men in black and white, and experiment with this in *Photoshop*.

Part 4: Doing Photoshop work

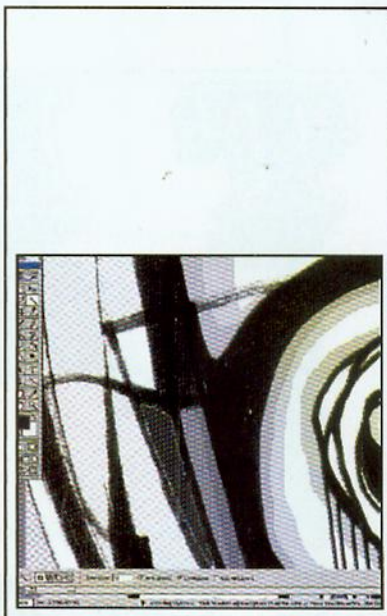
Add shadows to integrate the astronauts into the *Illustrator* scene...

Keep it simple

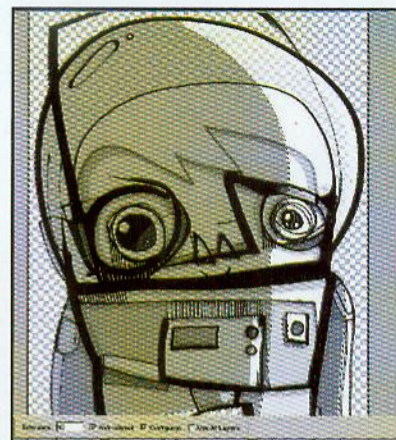
By recording my working process during this illustration, I hope to have shown that fancy computer skills aren't vital in creating nice illustrations. It's best to keep things simple and concentrate on the composition, drawing and colours.



1 The astronauts need some shading to bring them to life and add weight to them. It's important to preserve their scrawled hand-drawn nature when fleshing out their details. This will also act as a neat contrast to the smooth vector shapes I've used in *Illustrator*.



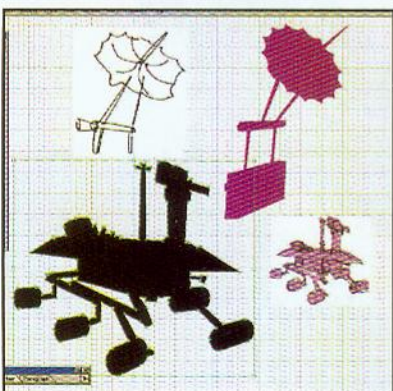
2 Using the Pen tool in *Photoshop* set to a low opacity, I trace around the contours of my original drawing. Altering the opacity and size of the pen allows complete control over contrast and shadings. The Marquee tool can also be used to help mask off areas before shading.



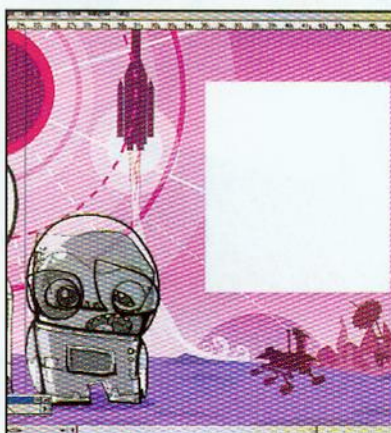
3 To integrate the astronauts into the *Illustrator* image and make them look more seated within the composition, shadows are created over them. Looking at the *Illustrator* image, I decide the light source should come from the planet in the centre of the image. To create the shadow in *Photoshop*, I mask off the entire astronaut and create a new layer above, filling in the marquee black. Dropping the opacity of the layer enables me to see the astronaut underneath and then I cleanly erase the areas where the light would hit. Some tweaking between *Illustrator* and *Photoshop* is needed until the shadows are positioned just right. The shadows help to create a greater sense of depth to the piece, pushing the illustration a little closer to completion.

Part 5: Piecing everything together

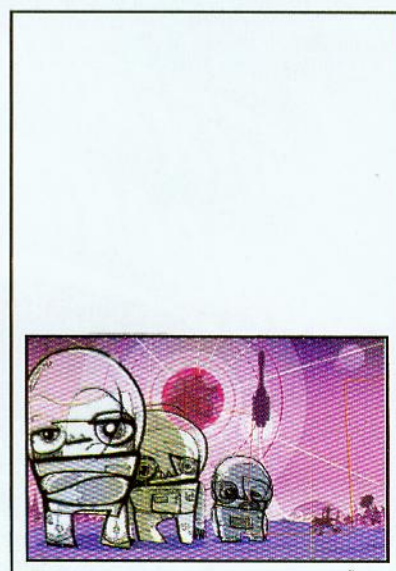
Add some final elements and tweak things in *Illustrator* until you're happy with the results...



1 The *Illustrator* composition is now coming together nicely with the hand-drawn astronauts (which will be kept as bitmaps) but more detailed background elements need to be added. I scan in some doodled space exploration equipment and set about creating vector versions to drop into the composition. I refer back to my doodled notes taken from the space books I looked through during the research process. I want to make sure the shapes used for the rocket and space rover have some semblance, however sketchy, of the real things. Although the illustration is set firmly in a stylised world, there should be some nods back to accuracy of source.



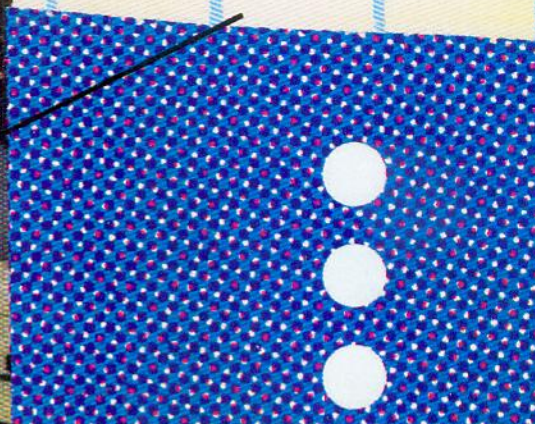
2 Without trying to make the image too busy and cluttered, I add rocks, craters, mountains, stars and other planets. The added red and yellow angular paths, representative of odd radio chatter and bouncing satellite signals, weave in and out of the composition, linking objects together while leading the eye. These vector-based elements add contrast to the three prominent figures in the foreground. The colour scheme of the image is one of pinks, purples and greys. Limiting the palette gives the image a certain emotional atmosphere and overall continuity.



3 Finally, a small amount of tweaking is required – nudging objects here and there – along with a tidy up of any stray anchor points. Switching to outline view (Ctrl+Y) is useful when trying to spot any strays in the image. **ca-p**



CLIENTS



Computers can't do anything unless humans build them, unless humans connect them, unless humans work them—then they'll do what humans want them to do. And, anyway, who thought up the idea of computers in the first place? Humans, of course. You're smarter than a computer

35 Essential Tips for Illustrators

Trying to get ahead in illustration? Today's tough climate demands insider know-how. Get a head start on the pack by following these 35 top tips in easy-to-swallow, bite-size chunks...

Despite the wealth of talent in illustration today and a client base that appears keen to tap into the current Zeitgeist, the road to creative heaven can sometimes be paved with pitfalls. Whether you're just starting out in illustration or are hardened and battle-weary, here are the crucial — yet sometimes easily overlooked — tips to pull you through. From advice on capturing creative moments to maintaining minimal stress levels, from smart digital do's and don'ts to fee structures and copyright issues;

it's all here. From 1 to 35, these top tips will make a difference to how you tackle the minefield and mindset of life as a professional freelance illustrator. >



Expertise and illustrations provided by illustrator Lawrence Zeegen. Lawrence has worked on commissions for numerous newspapers and magazines, for design companies and advertising agencies. He is also Academic Programme Leader for Communication and Media Arts at the University of Brighton. Lawrence's work can be viewed at [w] www.zeegen.com.





An alternative to the handheld portfolio is a digital one. Create one with the help of [w] www.apimac.com's shareware digital Slide Show software.

Research and development

1. Ideas, ideas and more ideas

You're only as good as your next idea. This may seem harsh, but it's vital to think creatively as well as draw creatively. Illustrators who stand the test of time are those who communicate through their work, who always have an idea, a message, something to say.

2. Brain food

Get out more. Really, get away from your screen and check out what's going on in the real world. Switch off and walk away, make time for visiting exhibitions, galleries, museums, concerts, libraries, parties, talks, lectures, events — feed your brain.

3. Get it down

Carry a notebook, a sketchbook and a digital camera. You will see stuff worth noting, drawing and photographing on a daily (or possibly even hourly) basis. Get used to equipping yourself every time you leave your house.

4. Investigate your subject matter

Illustrators often have to be experts in a range of subjects. If you're commissioned for the travel page of a magazine for a feature on airport security, you'll have to know the subject. Or if a science magazine commissions you to do a feature about robotics, you'll need to be an expert on that too. Do your research.

5. Mouse-click reference library

No time to get to the library? Can't get to the zoo to draw that chimp? Can't set up a mini-photoshoot in the kitchen? Can't remember what colours make up the Cuban flag? Get to [w] www.google.com and search using the image search feature. An invaluable but often overlooked resource.

Getting out there

6. Carry out

Getting your work in front of clients is paramount. Ensure that those who commission illustrations see your work. Invest in as many suitable avenues as you can afford. Your starting point should be an off-line portfolio — you know, the sort that has a handle.

7. Looking good

Present your work as professionally as you can. Nobody notices good presentation, but everyone spots it when it's poor. Remember, every portfolio viewing by a client is a potential project (or goldmine, if you're lucky).

8. Target

Don't waste your time (and the time of others) by being poorly informed. Make sure that you do your research before making contact with potential clients. Find out what kind of work they create, and decide whether your work fits, or *could* fit. If it doesn't, then keep well clear. Target the right audience.

9. Putting it about

People like to put a face to a name, so get out and see as many publishers, design companies, advertising agencies, new media companies, and so on, as you can. Use every meeting to get feedback about your work and as a chance to pick up further contacts.

10. Portfolios galore

Create more than one portfolio. If you don't, you can guarantee that a client will call in your portfolio while it's out with another client. Nine times out of ten they'll wait until it can be retrieved, but occasionally, on rush jobs, there simply isn't the time and you could lose out to another illustrator.

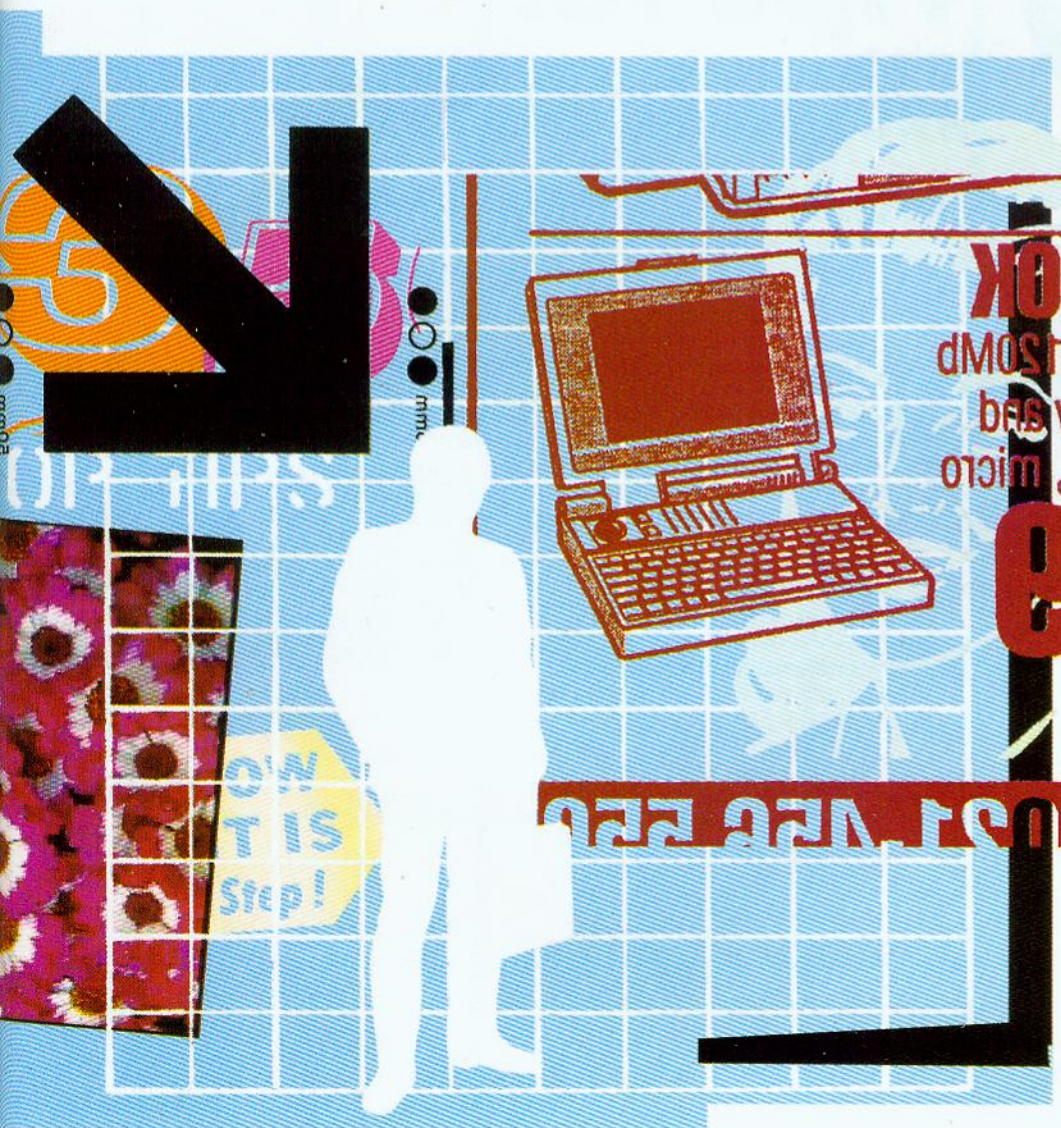
11. Be aware

Read the advertising and design press on a regular basis. You obviously invest in *Computer Arts Projects*, but you should also be picking up numerous global design mags. It really pays to know who is working for whom and on what projects.

The commissioning process

12. Getting to grips

When it comes to the commission, don't wing it. If you're unsure what is expected, ask questions. Find



out what size and proportions the final printed version will be. Ask about the best format for the artwork, the deadline for visuals and final artwork. And, of course, the fee!

13. Plan, plan and plan some more

Give yourself enough time to research, contemplate and brainstorm prior to putting pencil to paper or mouse to screen. Think about the project outside of 'office hours', when in the bath, on your bike, wherever it works for you. Creativity can take time, so make sure that you build this into the production process.

14. Get creative

Attempt to create more ideas than you could possibly use, then pick the best ones and talk them through with your client. However, don't show any ideas that you don't want to see through to artwork stage, because clients often pick the idea or approach that you see as being the least successful.

15. Be original

Develop your own way of working, your own style or approach. Be aware of the work of other illustrators, but don't rely on their vision. Ensure, if you have numerous ways of working, that your client understands which vision you see as appropriate to their project.

The art of self-promotion

16. Underestimate at your peril

Promoting one's work can be as vital as creating the work in the first place. Without some kind of self-promotional tool, it can be impossible for a potential client to remember you or your work. Decide how to do it and invest time, cash and energy into making it work.

17. Print or screen promo? Both!

In this digital world, you need to promote yourself in every way you can. A Website without a card promoting it won't get any hits; a card without a Website is just one sample of your work. Plan a strategy, build a site and then promote it with a fine-tuned mailing list.

18. Spam – don't do it!

Simple, don't send out unsolicited emails with attachments, in an attempt to get people to view your work. Ask them first if they'd like to receive regular emails letting them know of updates to your site. And make sure you give them the opportunity to de-register too.

19. Offline and online

Create an online digital portfolio and an offline version that can be viewed in a browser straight from a CD. Think about building a slide show straight into an application such as the Apimac *Slide Show*, available as shareware at [w] www.apimac.com. Your end-users won't need the application as it runs itself.

Digital do's and don'ts

20. Go faster

Get broadband. It's now cheaper than ever and most of the UK is covered. You'll need to receive reference materials and images via the Web as well as send large artwork files via email or upload to your own

and/or your clients' Websites. Dial-up is dead. Get broadband and find out what all the fuss has been out.

21. Buy portable

If you're considering a studio outside the home, think about investing in portable kit. A powerful laptop hooked up to a big flat screen monitor and keyboard gives you flexibility – you can take it home for those late or all-night sessions. Scanners and colour digital printers are as cheap as chips nowadays, so duplicate your set-up.

22. Get into data entry

Invest in a good database application and keep your client, invoice and job records bang up to date. Mail-merge and create address labels for self-promo mail-outs. Make a regular habit of updating new information, because being organised right from the start makes good business sense.

23. Buy in some help

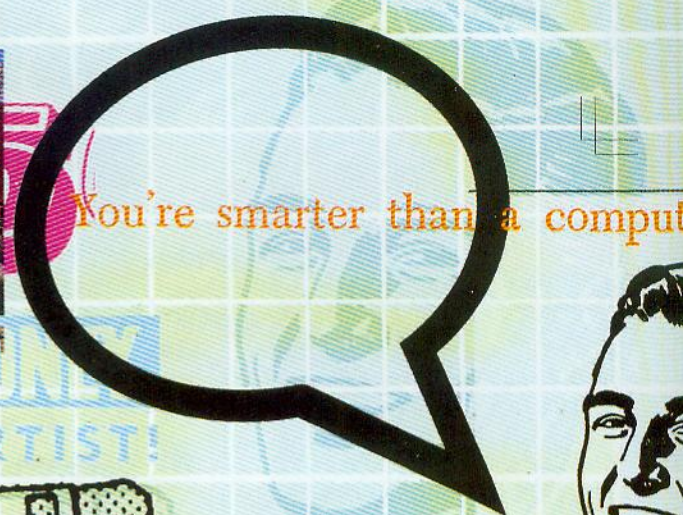
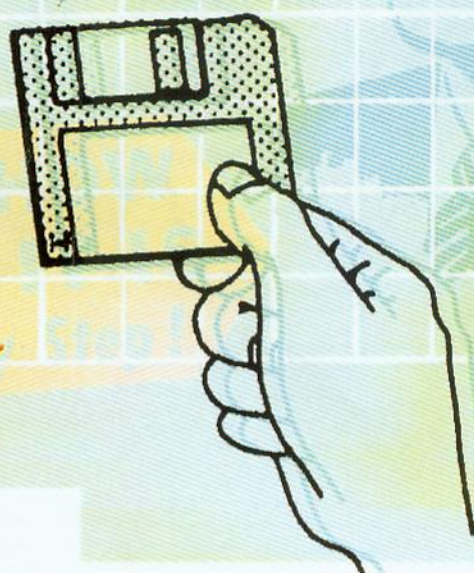
If you don't have the time to create your own database of potential clients, buy in some expertise. Go to [w] www.filefx.co.uk and purchase their regularly updated lists of who's who in the creative industries. Choose to have lists supplied on disk and import them into your database.

24. Back up

Buy an external hard drive and back up on a regular basis. Archive all of your work onto CDs or DVDs. Do it twice. Keep one set at home and one set at your



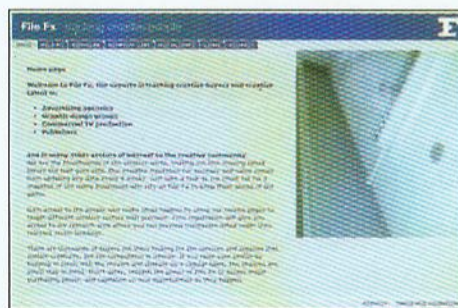
DRAW for MONEY
Be An ARTIST!



The Association of Illustrators, [w] www.theaoi.com, is a good vehicle for getting your work seen.



You'll need to use a good search engine to swat up on different subjects. Try [w] www.google.com's image search feature.



Visit [w] www.filefx.co.uk to purchase lists of creatives in advertising, design, publishing, and so on.

28. Smart working

As well as looking after your eyes, make sure that your desktop is set up correctly — your real world desktop, not the virtual one. Ensure that your screen is set at the correct height and angle. And make sure that your seat is at the right height too so that your arms are at the correct angle to use your keyboard.

29. Send invoices

Start with good habits and keep them up. Invoice for work as soon as it has been completed, delivered and signed off. Your clients will take some time to pay you — this can vary from one to three months. Invoice as soon as possible to avoid nasty cash-flow problems.

30. Tax returns

Self-assessment means that dealing with the Inland Revenue has become easier, although for some it can still be a minefield. Speak to and appoint an accountant as early as possible. The time, money and stress that they can save you will be worth every penny of their fees.

In the know

31. Copyright issues

When you're commissioned to do a piece of work, you are normally paid for the rights to use the image that you have created. As the originator of the artwork, you retain ownership of the artwork itself as well as the copyright. If the client wishes to use the image wherever and whenever they like, it may be worthwhile selling the copyright. Make sure you know your rights.

32. Fees

Fees traditionally are the trickiest area for illustrators. Get the fee sorted before you start the job, so that any potential confusion is straightened out way before you get cracking. Most agents demand that clients complete purchase orders before the project is started, as protection for their illustrators; you could do the same.

33. Rejection fees

Jobs can go wrong for a variety of reasons, so prepare yourself for the worst. Be sure that your client understands that a job rejected at visuals stage can be charged at 25 per cent of the full fee, and jobs cancelled at final stage, through no fault of your own, can be charged at the full rate. Be prepared to negotiate though, because it may be more worthwhile keeping the client.

34. Get chasing

Don't wait for the phone to ring; get on the case and get out there. Keep your eyes open for opportunities for illustrators, and look out for new publications, which appear all the time. Look for advertising campaigns that use illustration, and approach the agency that commissioned it. Chase every lead.

35. Get organised

Find out what's going on in the illustration industry. Look at joining The Association of Illustrators, [w] www.theaoi.com, is a sure-fire way of getting impartial advice about fees and support and info about industry practice, as well as invitations to portfolio surgeries, lectures and conferences. **CS+P**

studio. The chance of a fire wiping out one set is unlikely, but it's near impossible for two sets in different locations to be destroyed. Your work takes time to create, seconds to lose.

25. Don't sit still

Technology advances relentlessly, so budget for this. The hardware and software that you purchase right now will become outdated pretty quickly. Recognise that you'll need to upgrade on a regular basis. If you can get by for two years on today's kit and software versions, you're doing very well.

Studio set-up

26. Be routine

Working for yourself means being self-disciplined, especially if your studio is at home. Make sure you get to your desk at the same time every day, open your post, check your emails, work out a schedule for the day and work regular hours. Don't switch on daytime TV, stay in your pajamas or stop every few minutes to put the kettle on.

27. Eye maintenance

Look after your eyes. You couldn't be an illustrator without them. Take regular breaks and use the time to rest your eyes. Staring at a screen for hours on end will do them no good, and it's no accident if you have a headache at the end of each day. Get into the habit of focusing on distant objects at regular intervals, say, looking out of the window.



This identity parade of Ruth Thomlevold's work shows how to adapt figure work for various media. The Nokia images are from an animated presentation, and are simplified compared to the Rimmel characters, which were used in stills.

ILLUSTRATING FOR DIFFERENT MEDIA

The cross-media nature of today's world means illustrators must create increasingly adaptable work. We find out how a number of illustrators manage to perfect work for each individual medium...



Illustration used to be aimed at the world of print, regardless of whether the work was digitally assisted or not. However, times change, and today's illustrators are

increasingly faced with the challenge of creating work for a wide range of media, each of which has very different properties. Corporate branding must work in print and on television, and there are additional headaches of the Web and mobile devices to cope with. Illustrations created for newspapers, magazines and books will often end up appearing online, while some online projects find their way back to print.

We speak to a number of leading illustrators working in various media, and ask them how they approach their work, which medium they prefer, and how to go about creating work for cross-media purposes.

OLD FAITHFUL

Technology marches on, but the bulk of illustrators still specialise in print. However, as 2Advanced's Eric Jordan states, "Print is the most daunting form of illustration, because there are so many variables to worry about. Every aspect of the illustration must be carefully scrutinised before it goes to print in order to avoid costly mistakes and disappointing results." It's partly for this reason that 2Advanced tends to favour screen-based work, but other designers have a different take. While Oz Dean of forcefeed:swede concedes that print is the hardest medium to illustrate for, and that you "need to know more to produce successful results compared to illustrating for the Web", he's discovered himself being drawn to print for its tangible qualities: "There's nothing like seeing your artwork in front of you and being able to touch it — it's a superb feeling."

Most designers cite *Photoshop*, *Illustrator* and *FreeHand* as the tools of choice when working on print-based illustrations, although comics and concept artist Mark Harrison reminds us to explore all available options: "*Poser* and *Bryce* offer 3D solutions

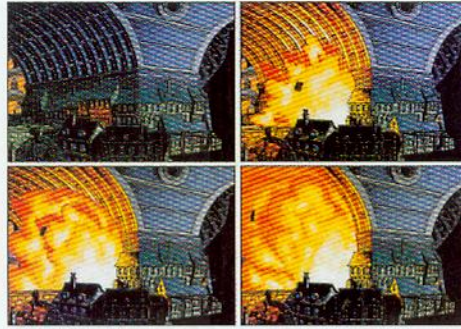
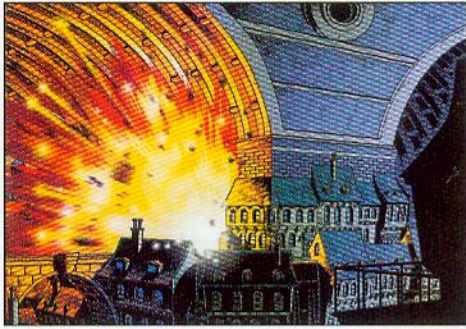
to typical artist nightmares, namely perspective and lighting. A 3D model can take the headache out of trial and error, plus offer intriguing alternatives when experimenting with texture-mapping modes."

Chris Blythe, an illustrator who's worked on numerous books, magazines and posters, likens the process of digital illustration to traditional media: "When linked to a graphics tablet, *Painter* enables me to work as I would with traditional media, creating a pencil sketch, under-painting and then painting over the sketch." Posters are his favoured medium: "They're fun because of scale — it's gratifying seeing your work big, when computer screens are rarely larger than 21 inches." He warns that computers suffer when working at such scales, though (as they do with very high resolution work). "In such cases, I do as much as possible at a lower resolution or size, such as basic layout and blocking in with paint."

ON THE WALL

There are more things that set posters apart from other print media. "They give you a huge amount of space and freedom to express yourself," comments Steve Wallington of Point Bank Design. As such, poster illustrations are often bold and spacious, which is also necessary for them to be noticed at a distance — essential for this type of advertising. Oz Dean explains how he ensured such requirements were met when working on a piece for Wacom earlier this year: "The poster started off as some scanned shots of broken hardware and wires. I experimented with them in *Photoshop*, altering the image to enhance contrast, using curves and the Posterize filter. The result was then worked on in *Illustrator* to give it a little more life." The poster was subsequently seen throughout Oceania in spring 2003, appearing in dozens of Apple stores.

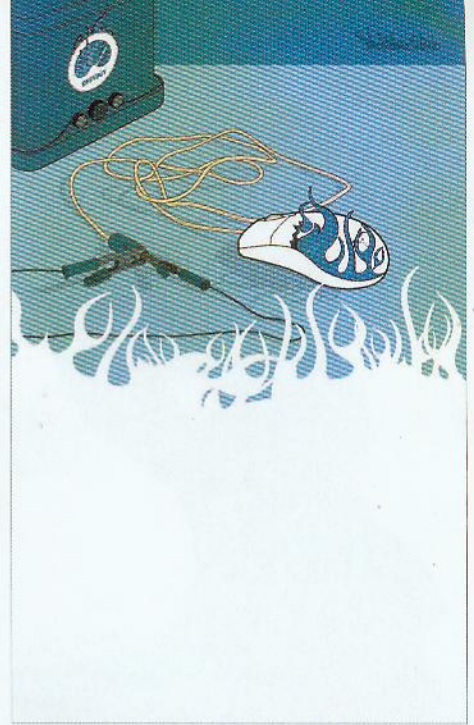
Freelance illustrator Ruth Thomlevold reckons the easiest media for illustrators are magazines and newspapers: "There's no file size limit, and briefs are interesting and current." For such projects, she initially



The animated sequences from Matt Brooker's *Scarlet Traces* Web comic had to be reworked when it was converted to print. Here, the explosion was repainted in a dramatic way, with motion blur and glow effects, to compensate for the loss of movement.

creates hand-drawn images and focuses on maintaining the different line quality and texture that a pencil provides. "After scanning in a drawing, I use flat colours and graphic shapes to build the final image, focusing on composition and harmony." She says clients are fond of the combination of traditional media and computer enhancements.

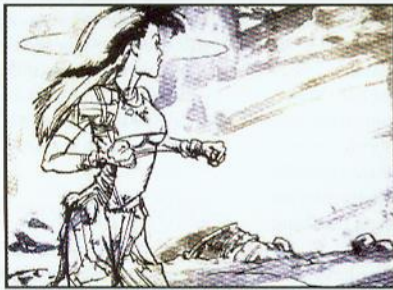
Perhaps this is partly down to convergence of media, and the increasing amount of de-facto screen-based illustration. "We work with all media, including print, television, Web and mobile, but prefer screen," says Moving Brands' James Bull. "Print is too permanent and parts of the process are out of your hands; screen-based work can evolve and react to the user." >



Having made the move from Web to print, Oz Dean of forcefeed:swede reckons that there's much more to know in order to produce successful results, compared to illustrating and designing for the Web. This piece for Wacom was displayed throughout Oceania in spring 2003.

Creating concept art

Mark Harrison leads us through the process he uses when creating artwork for comics and concept art for film and television work...



1 Mark breaks scripts down into storyboards and decides which elements will benefit from computer input. *Poser* is often employed to assist with figure work. The initial line art originates offline, composed with Windsor and Newton Peat brown ink applied with various brushes and pens to A3 Bristol board.



2 The line art is scanned in at 67 per cent and at 216dpi – a workable size – and opened in *Photoshop* on a Multiply layer. This layer is turned off and object colours blocked in over a dark background. There's no real attempt at tonal work at this stage.



3 Mark's artwork document contains texture layers that add extra detail, such as a Hardlight layer speckled with grey, which acts as sweat in highlights, and a Multiply layer of patchy tone that represents dirt. These are edited to fit the composition, by erasing areas, making selections with Quick Mask, and by using channels.



4 This step shows both line art and background textures. A coloured overlay is added in Screen mode for smoke effects, and line art cleaned up with levels and Dodge and Burn, then sharpened with Unsharp Mask. The line art, foreground, mid-ground and background masks are pasted to an alpha channel to preserve them.



5 A scene overlay colour is added, reminiscent of digital grading in film. This manipulates the image's colour palette to a specific look, desaturating conflicting colours and enhancing the art's feel. Colours are taken from a file Mark created that ensures predictable results, such as bluish midnights or bleached desert days.



6 In *Painter*, mid-tones and highlights are added using custom brushes. Colours are sampled from object colour layers or a clone with affected colour values. In *Photoshop*, more elements are added, such as light beams on a Screen layer. The art is then interpolated to 300dpi for print or 72dpi for Web and sharpened with Unsharp Mask.

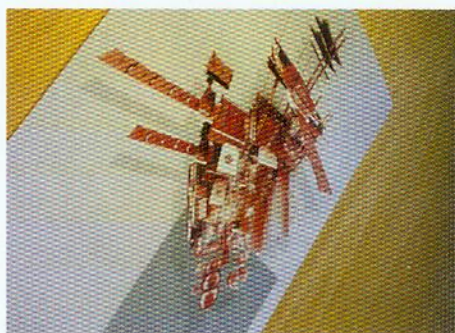


Because Max Ellis has the "same degree of obsessive perfectionism" for every image he works on, he's not a fan of the Web, with its limited resolution.

He notes that motion is increasingly being used to convey the character of a brand, and that illustrators working in these areas should always think about how such things work across all media, from business cards to Web and television.

FREEDOM TO MOVE

Anyone who's seen 2Advanced's portfolio will hardly be surprised that broadcast is the organisation's favoured medium for illustration. "There's more freedom and less restriction," says Eric Jordan. "We needn't be concerned with print-based issues such as bleeds, colour limitations and resolution, nor Web restrictions like compression and technical restraints."



While considering it in some ways a daunting form of illustration, due to the number of variables and restrictions, 2Advanced still makes the occasional foray into print.

He explains that this enables 2Advanced to be more creative, and artistic freedom is further enhanced by the platform, allowing for complex effects. "Using a combination of raster and vector elements, we illustrate our material without having to worry about file size," says Eric. "Optimisation comes last during the encoding process when everything is compacted on a frame-by-frame basis, using a series of compression codecs." He claims *Illustrator* and *Photoshop* come in handy when designing for broadcast, because illustrations can be imported into *After Effects* as a 'comp' made up from the same layers created in the illustration application. Furthermore, *After Effects* remembers any effects used and applies them in the same fashion, so your illustration is ready for animation right away.

Such freedoms are more limited on the Web. While similar effects are possible in *Flash*, they eat into CPU time, so most illustrations are simplified, and simultaneous animated elements reduced in number. For brief animations, this is rarely a problem, according to Ruth Thomlevold: "If something will only be in sight for a few seconds, focusing on the main message is the most important thing. When animating a character over a moving background, focus on the character itself and simplify the background."

As a publication medium, the Web is also limited with regards to quality, as Austin Cheney explains: "Monitors can only show images up to a certain size, so they must be created at low resolutions with less attention to detail, in order to fit on the average user's screen." And, of course, such screens can be one from any number of sizes, so you must cater for the most common of them, reducing the typical Web-based illustration to a few hundred pixels in height. "You're also restricted by the limitations of HTML," says Eric Jordan. "When we begin illustrating for Web interfaces, we sketch in a rough format to see what's

feasible for the browser environment. Things such as frames, tables and cells pose hurdles when creating organic and free-flowing designs rather than something rigid and modular."

Optimisation is key when illustrating for the Web, because your end result will need to be suitable for delivery on slower connections. "We keep this in mind during the illustration process, often reducing colours, transparency and complexity," says Eric. Illustrator Lee Bursford adds that you must also be careful when reducing print work for the Web: "The small sizes can have a terrible effect on details — they may blur and become indecipherable." This is why Ruth Thomlevold reckons the approach must fit the medium: "Detailed pencil work cannot be justified for 72dpi, so it's often best to use vectors for the Web." Ruth's Web work is created in *Illustrator* and *Flash*, something she enjoys — despite the restrictions — due to the possibility of animating the characters and bringing them to life. There are other definite advantages to Web-based illustration. Austin Cheney reckons that "the low resolution is undemanding, and it takes less time and resources to create images at an acceptable quality. Publication on the Web is also cheap and results are easy to edit."

Max Ellis, who's spent the last 17 years working as a freelance illustrator for dozens of magazines, newspapers and advertising agencies, is far from convinced. "The hardest jobs are the smaller images. I always work to the same degree of obsessive perfectionism and it irritates me to have to waste my time producing an image that's two inches high... low-res sucks!" Unfortunately, with the advent of mobile, things look set to get even smaller, which is already causing concern for some. Ruth Thomlevold notes how she was asked to do some character illustrations for a mobile phone company and became worried regarding how to make them stand out as individuals within the limitations of the screen.

RISKY BUSINESS

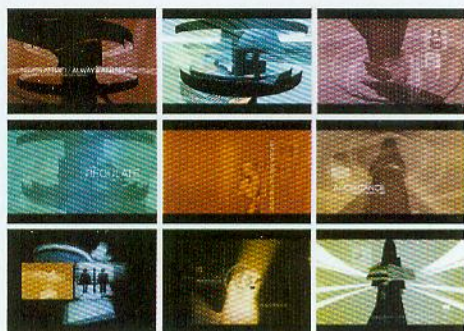
Such problems are multiplied when results need to work across a range of media. As Ruth says: "The characters need to look equally good on the phone and on huge posters, and also send out the same message." To make matters worse, each medium handles things like colour, line, weight and motion differently, often requiring individual rendering in each case. Such issues can often be minimised by adopting a vector-based approach, as Matt Brooker did for *Scarlet Traces*.

Scarlet Traces started life as a 96-page Web comic, but the idea of a print version was always there, so Matt maintained print compatibility from day one. The use of vectors means resolution wasn't an issue — a bigger worry was colour, which may appear differently on various displays and in print. "I used colour schemes based on a balance of warm and cool colours, which survive colour biases well," explains Matt. "I also ensured that CMYK-safe colours were used, despite the initial Web version being RGB. When using any outside the CMYK gamut, I set up the files so those colours could be easily replaced."

Several other things had to be taken into account when reworking the Web comic for print. The aspect ratio for the original was A4 landscape, but comics are portrait. In the planning stages it was therefore decided that two Web pages would compose each print page; and because on-screen lettering had to be



Ruth Thomlevold advocates concentrating on characters and simplifying backgrounds when illustrating for online and animated characters, such as these figures for an in-house Nokia presentation.



2Advanced favours illustration for screen-based projects because it affords the company the most freedom with regards to creativity, and it has the fewest restrictions.

large for readability, it ended up being appropriately sized when the pages were reduced for print.

The artwork also fared well, although there were some problems. "The Web version had animation," says Matt. "I was the only one creating the artwork, so the animation was simple — pans, zooms, travelling cut-outs and so on. I stole ideas from low-budget Anime, in which motion is implied by the least amount of animation!" Such elements had to be reworked for print, so Matt ensured that one frame from each sequence (or one position of any floating elements) would tell the story in the same way as a static frame. Matt also made the correct initial decision to rasterise *Illustrator* files at 300dpi whether working for print or Web. "Scaling down from 300dpi to 72dpi is easy, but you can't scale up from 72dpi," he says.

PLANNING AND CHECKING

Matt bears in mind several other 'make or break' factors when planning illustrations, most of which are common sense, but several of which can be overlooked. He elaborates: "If there are animated elements, these should be on separate layers — you can flatten these for

print, but taking flat illustrations and cutting out elements is tough. You must be aware of the colour mode of your medium. For instance, does the image need to work in black and white as well as colour? When using RGB and CMYK, take into account the narrower CMYK gamut, and if converting images to GIFs, it's sometimes worth using Web-safe colours, even if your master file is in CMYK. Finally, is the artwork going to be used very small, such as on a mobile? If so, you may need to draw a second, simplified version."

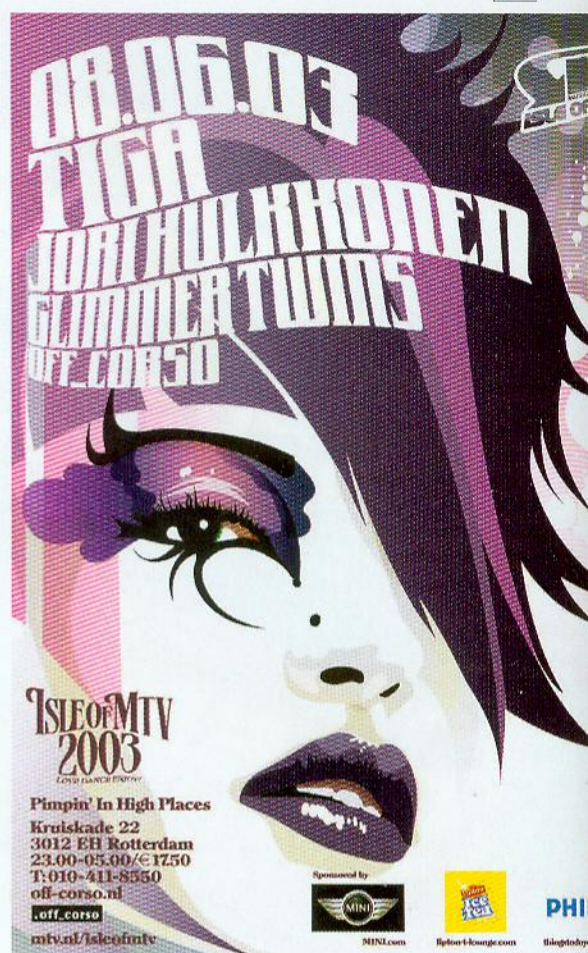
James Bull agrees that planning is the most important aspect of creating cross-media illustrations: "We rarely produce anything without considering cross-media implications," he says. "In an industry where brands must communicate with consumers at every point of touch and where media channels are always broadening, it would be foolish to produce work that could not adapt and continue to exist across all media."

Mark Harrison also reminds us that various media influence each other: "The cinematic effects of my comics art are based on traditional film effects work, hence the filmic look. I render Bryce models against blue backgrounds, just like blue screens in film, which allows for easy extraction from the render in Photoshop's colour range. I also use a process akin to digital grading, applying colour layers to alter an image's colour palette, to provide a specific look."

Whatever technique you use, Max Ellis concludes that the "level of finish is ultimately restricted by deadline. While I enjoy 'rapid response' jobs, which I approach in a Jackie Chan-style 'getting in and out' with maximum speed and efficiency, longer deadlines provide the opportunity to indulge my passion for perfection." Matt Brooker agrees, again citing his time with *Scarlet Traces*: "The main difference between each medium lies not in the technique but in the planning. In the end, any limiting factor has more to do with when the deadline is and how much you're being paid." **CAAP**



Expertise provided by Craig Grannell, who can be contacted at ej.craig@smbcommunications.com



Posters are the preferred medium of Point Blank Design's Steve Wallington, because of the space and inherent level of freedom. However, he says print is the hardest medium to illustrate for because everything must be spot on.

Working on multiple platforms

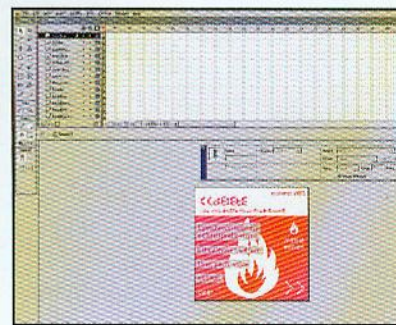
Mark Johnson explains how clear* uses *Photoshop* when creating artwork for various platforms — in this case, adapting an existing print document for use on a PDA...



1 This is the original *Photoshop* document. When clear* starts adapting work for use in cross-media, existing assets are opened to use at a lower resolution. In this case, the document is a CMYK front cover image, from which the text and vector art will be used.



2 The document and vector path is copied to a template, with defined dimensions of the target platform. Artwork is resized, and headings reworked in order to make the best use of the available space. The target platform is the Palm PDA, so artwork is exported as a .fla via the PSD2FLA plug-in.



3 Here's the *Photoshop* document converted and open in *Flash*. The process has resulted in a .fla version of the original document, complete with separate layers and labels. From here, clear* can add any desired interactivity and publish the result as a .swf.

COMPUTER arts projects INTERACTIVE



On the CD

Your guide to the free extras given away on this issue's cover disc...

DUAL DEMO PLUG-IN

SymmetryWorks 2

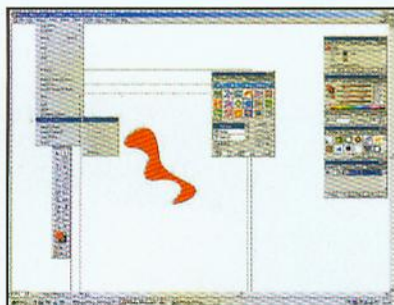
Complex pattern generation has been made easy with this powerful *Illustrator* plug-in...

SymmetryWorks is a clever *Illustrator* plug-in for developing complex tiled patterns without seams, borders or asymmetry, funnily enough. The process of creating tiled patterns by hand can be tedious and frustrating, but with the aid of SymmetryWorks you can be turning your original design into any number of patterns based on a set of rules which are applied to your geometry.

The plug-in introduces a new palette into the *Illustrator* interface, containing all the tools you'll need. The advantage of SymmetryWorks is that you can spend plenty of time experimenting with your initial ideas, seeing them updated as you move among the shapes you've created. The demo version limits you to a single base pattern per session, but this is still plenty to begin getting the creative juices flowing.

Using SymmetryWorks

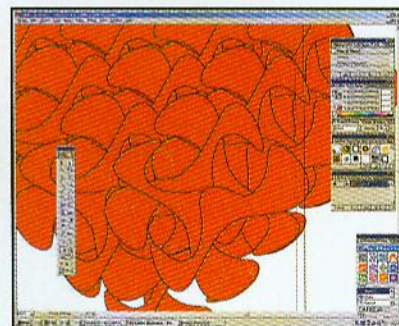
Developing complex, seamless parts with ease...



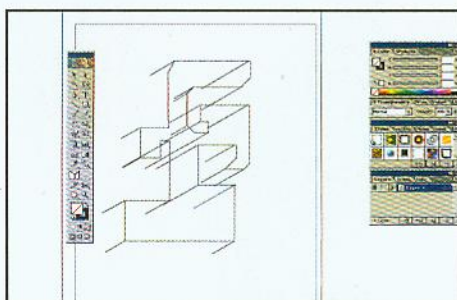
1 Once you've installed the plug-in and opened *Illustrator*, you should see the new SymmetryWorks palette, which has been added to the interface. If not, go to Window>SymmetryWorks. Draw your base shape using the Pen or Pencil tool. Then, with tile set to 1,1, hit the Make button on the palette or follow the menu commands as shown.



2 Once you've generated your first pattern, you'll notice that the position of the three additional pieces of geometry are dependent upon the original. Their relative positions can be affected by editing the triangular 'control' path. This can be done using the Direct Manipulation tool. In this way, you can quickly generate a number of interesting patterns.



3 Once you're happy with your pattern, select your original geometry and press Release on the palette. This takes you back to your single design. Now, increase the number of repeats in the Control palette – we've used 4,4. When you hit the Make button this time, you're faced with a tiled example of your work. This can be edited similarly.



Draw constrained lines with the Isometric Line Tool plug-in.

Illustrator plug-ins

Your disc holds a collection of free and demo *Illustrator* plug-ins, ranging from file converters to full-on CAD functionality...

Demos

Applicraft's CADgate (Dual)
Comnet's FoldUP! 3D (Dual)
Elysium 3D-Tiger
HotDoor CADTools 2.1 (Dual)
HotDoor Multipage (Dual)
HotDoor Perspective (Dual)
Panopticum Vectorizer (PC)
SymmetryWorks 2
Vertigo's PopArt 2.0 (Dual)
Virtual Mirror's Vector Studio (Dual)

Free

EPS Extractor (PC)
Flash Writer (Dual)
Freebie Filter plug-in pack (Mac)
Illustrator's Assistant (Mac)
Isometric Filter plug-in (Mac)
Isometric Line Tool (Dual)
Line Weight Filter plug-ins (Mac)
Rotate Text Un Transform (Mac)
Select OpenClosed Paths (Mac)
Select... Filter plug-ins (Mac)
TrueType Postscript Converter (PC)

DUAL DEMO PLUG-IN

Elysium 3D-Tiger

Convert your 3D models into striking vector art at the click of a mouse button...

This is a real gem of a plug-in. 3D-Tiger converts your 3D models into vector artwork. If you have either downloaded or modelled a character or object in the package of your choice, you can then import this into *Illustrator* using 3D-Tiger to convert the object into line art.

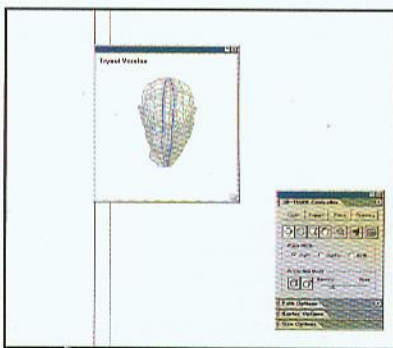
There's a simple interface, which enables you to choose your camera angle. Even better, it enables

you to select your focal length. This means you can take wide-angle shots of your model right there within *Illustrator*. 3D-Tiger also enables you to preview your work, choose line weights and colours, and then finally place the converted image into your *Illustrator* document.

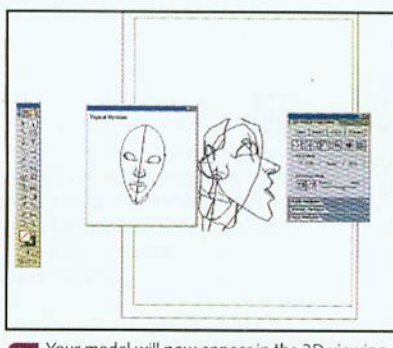
The demo is limited to 25 uses. That's going to leave you needing more.

Using Elysium 3D-Tiger

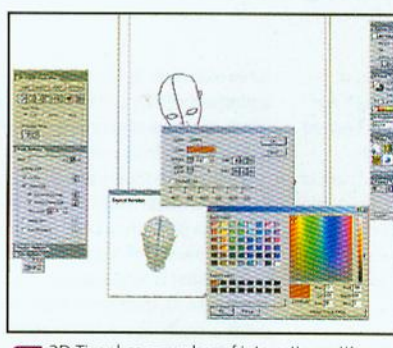
Translate 3D models into beautiful line art...



1 Once you've installed the 3D-Tiger plug-in and fired up *Illustrator*, if the 3D-Tiger palette isn't visible, switch it on using Window>3D-Tiger. Then click the Open button on the Tiger palette and navigate to your model. 3D-Tiger can import DXF, DWG, OBJ, VRML, IGES, STL and XVL files.



2 Your model will now appear in the 3D viewing pane inside *Illustrator* itself. Here you can manoeuvre the camera angle and depth of field until you're happy with your view. You can preview the results by pressing the preview button. Once you have something interesting, just click Place and you'll have imported and converted your model.



3 3D Tiger has a number of interesting settings. The line weight can be altered, as can the bevel and positioning of end points and corners. Colours can be varied very easily too. There are also two separate projection types for your image, so the scope for generating some awesome line work is very wide.

Photoshop plug-ins

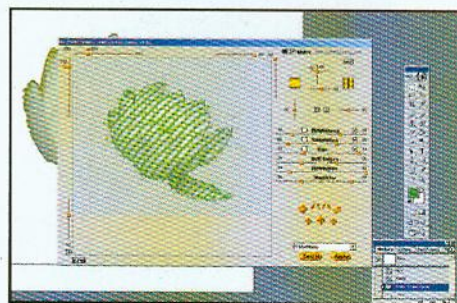
This broad collection of *Photoshop* plug-ins covers everything from photo retouching to geometric pattern generation...

Demos

EtchTone (Dual)
EyeCandy4000 (Dual)
HotText (Dual)
Perspective (Dual)
QuickSpace (Dual)
RedEyePro (Dual)
Scatterlight (Dual)
Innovations vol.1 (PC)
Innovations vol.2 (PC)
Innovations vol.3 (PC)

Free

BoxTop PhotoGIF (Dual)
BoxTop ProJPEG (Dual)
Cybia AlphaWorks (Dual)
Cybia ColourWorks (Dual)
Cybia EdgeWorks (Dual)
Cybia EmbossWorks (Dual)
Cybia MasterBlaster (Dual)
Cybia Mezzy (Dual)
Cybia SwapShop (Dual)
Cybia Screenworks (PC)
Redfield plug-ins (PC)



Generate patterns with Redfield's Lattice Composer plug-in.

BOOK REVIEWS

THE COMPLETE GUIDE TO DIGITAL ILLUSTRATION

Authors **Steve Caplin & Adam Banks** Publisher **Ilex Press** Price **£19.95** ISBN **1-904705-00-6**

If you're just starting out in digital illustration and are looking for a book that'll give you a clear overview of the entire subject, then look no further. This superb guide is packed with stunning images that are supported by well-written explanations of each of the categories covered, beginning with how to choose your hardware set-up and concluding with practical advice on how to become a professional illustrator.

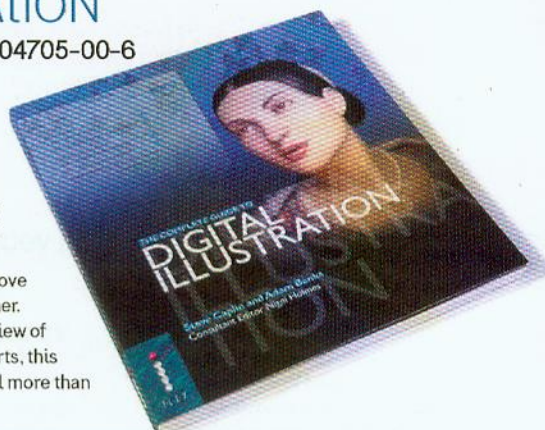
It's divided into seven sections, which comprehensively explain the techniques and software packages within each discipline. These include digital painting, 3D illustration, animation and

drawing. Each section uses artwork plus screenshots taken from the applications to illustrate how a particular set of tools can be used in the discipline under discussion.

Presented in large format with stunning illustrations on every page, this book revels in the digital arts. Although it's not a straight step-by-step software instructional manual, it does give guidance to the novice on what software is available to them, and what these packages actually offer.

Overall, this is a sumptuous book that's punctuated with portfolios of some of the best digital art currently being

produced. The authors have distilled the essential elements of digital illustration and presented them to the reader in an entertaining and, above all, accessible manner. If you need an overview of the digital graphic arts, this impressive book will more than meet your needs.



VERDICT

5/5

NORTH BY NORTH

Authors **Robert Klanten & Hendrik Hellige**
Publisher **Die Gestalten Verlag** Price **£34.99**
ISBN **3-931125-91-9**

This book poses the question of whether Scandinavian design has an identifiable style or aesthetic. Each of the projects within its pages clearly illustrates that there's a strong element of bold iconographic imagery, but the actual design style is more difficult to pin down. A wide range of disciplines are used to produce work that's strong graphically as well as innovative in its design.

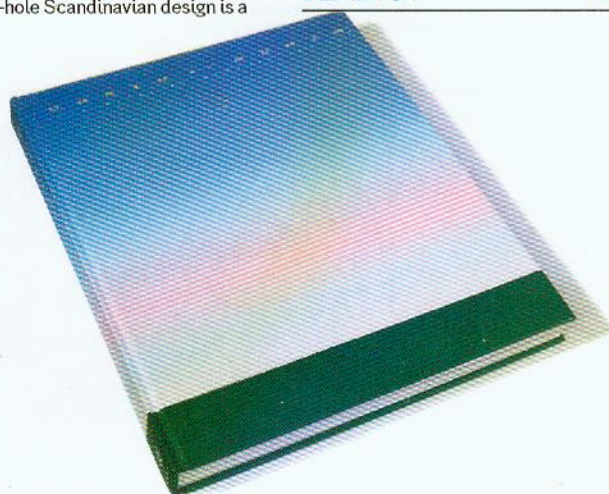
Presented in glorious full colour throughout, this is a varied portfolio of work. One thing is clear after turning the last page of this book: attempting to pigeon-hole Scandinavian design is a

futile exercise. By its very nature, it offers a plethora of disciplines used by a wide range of artists who produce work that's international in its style and appeal.

Each piece shown in these pages may have underlying cultural references, but these pale when compared to the sheer diversity of designs on offer. If you thought that Scandinavia contains more than its fair share of brilliant designers, this book will more than reinforce your view.

VERDICT

5/5



ILLUSTRATOR FOR WINDOWS & MACINTOSH – STUDENT EDITION

Authors **Elaine Weinmann & Peter Lourekas**
Publisher **Peachpit Press** Price **£24.99** ISBN **0-321-15067-8**

Here we have a few hundred well-laid-out pages that explain every facet of *Illustrator* in easy-to-follow steps. Being the student edition, you also get a study guide at the end of each chapter, which consists of set exercises, questions and answers, as well as a 'topics for discussion' section designed for teachers.

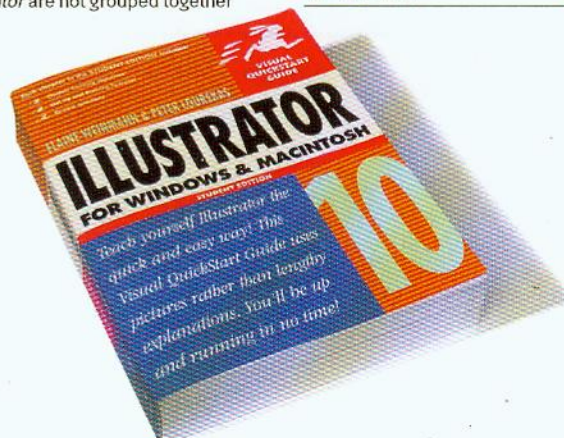
This manual covers version 10 of *Illustrator* and adequately explains each of its new features. Readers who have used previous versions will see that the new material is picked out in bold type. Unfortunately, the new features of *Illustrator* are not grouped together

at the beginning of the manual as you might expect, but scattered throughout the book's 28 chapters.

Overall, this is an excellent addition to the now well-established Visual Quickstart Guide series. The set exercises at the end of each chapter are well worth completing because they enable you to put the theory of the previous chapter into practice. A welcome full-colour section rounds off what is an excellent companion to *Illustrator*'s latest incarnation.

VERDICT

3.5/5



ILLUSTRATOR ILLUMINATED

Authors **Barbara Obermeier & Ted Padova**

Publisher **Adobe Press** Price **£33.99** ISBN **0-201-77573-5**

The work of 15 illustrators comes under the spotlight in this book. It's not only a feast for the eyes, with page after page of full-colour illustrations to inspire you, but it also attempts to offer a practical insight into how this group of artists actually produce their work.

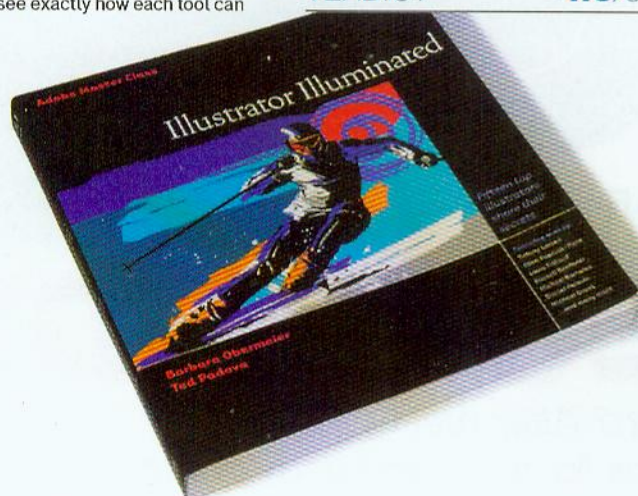
After a brief interview discussing each artist's approach to their art, the authors then look closely at how they produced a piece of work. Artists have been chosen whose work uses the majority of the tools and techniques that *Illustrator* has to offer. This enables you to see exactly how each tool can

be put to practical, and often stunningly effective, use.

The breadth of the work on show here is immense. From children's illustrations to industrial designs, each of the artists uses the program tools in a unique way. The melding of interview and practical explanation lifts this book from being just another collection of *Illustrator* art, to one that is not only interesting to browse, but also has substance that you can put to practical use.

VERDICT

4.5/5



DE MANIFEST

Authors **Stephen Johnston & Michael Spoljaric**

Publisher **Die Gestalten Verlag** Price **£26.00**
ISBN **3-931126-94-3**

An art portfolio from the Phantom: Research Foundation covers a multitude of disciplines that sit happily together in one volume. This portfolio illustrates the design space that is inhabited where graphic design meets fine art.

Each of the designs is presented individually. Very little explanatory text is offered — the authors preferring the work to speak for itself, something that it does in volumes. Photomontage is interspersed with more classical illustration, which has itself been given a new and unexpected twist.

The Research Foundation was founded by Johnston in 1996 with the project Phantom: Rucsak, an

interdisciplinary investigation into contemporary cultural consumerism in the UK. Since then, the work of the foundation has moved into other areas, but consistently illustrates the immense power that graphic design can wield.

De Manifest is a book to be devoured, because it offers the reader the chance to see first hand the work that's being done at the very cutting edge of design. The work may not be to everyone's taste, but it cannot simply be dismissed. To say that this book is a showcase of contemporary graphic design would be something of an understatement.

VERDICT

4.5/5



FLASH MX FREEHAND 10 – ADVANCED TRAINING FROM THE SOURCE

Author **Brad Kozak** Publisher **Macromedia Press**

Price **£33.99** ISBN **0-201-77502-6**

Intermediate designers will gain the most from this manual because it offers the *FreeHand* user the chance to add dynamism to their static designs. Over ten lessons, you'll discover how you can integrate your existing *FreeHand* skills with those you need to make the most out of *Flash MX*.

Early lessons build your knowledge one step at a time, with the production of a static logo that you can then animate with *Flash*. Later chapters show you how to create splash pages for your clients' Websites and then demonstrate how *FreeHand* and *Flash* are the perfect tools

to create a complete Website, online advertisement and presentation.

With all the files for each lesson available on the accompanying CD, you can dive straight in and start to hone your *Flash* skills. The emphasis here is on how you can use *FreeHand* within your *Flash* animations and, to this end, it offers solid competent advice. With each lesson full of essential hints and tips, this book will show you how to animate any of your *FreeHand* designs.

VERDICT

4/5

